

## Default Math Scope and Sequence

Although SuccessMaker Math is designed as a self-contained curriculum, you can also customize the content of courses to provide intervention or complement your existing curriculum. You can preview the skill objectives by signing in to the LMS. See “Course Details” in the SuccessMaker Help for details.

The SuccessMaker Default Math Scope and Sequence provides a comprehensive list of the concepts, topics, and skill objectives taught in each SuccessMaker Math strand. It is designed to help you quickly personalize intervention with custom courses and can be a vital classroom companion by:

- Providing an overview of the Math curriculum and showing what SuccessMaker aims to teach students in each strand.
- Assisting with lesson planning by quickly finding SuccessMaker Math topics that supplement existing lesson plans.

## Learning Object ID Description

The **Learning Object**<sup>1</sup> (LO) ID number in the following chart helps you identify the subject and type of learning object.

- The first set of characters indicate the course subject. All SuccessMaker Math LOs begin with SMMA.
- The second set of characters indicate the type of learning object:
  - LO - Learning Object
  - SG - Speed Games (Fluency)

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<sup>1</sup>A collection of shared content objects related to a skill.

- The third set of characters is the unique identification number assigned to the LO or Speed Game.

## Grade K

- "Geometry" on page 6
- "Measurement" on page 11
- "Number Sense and Operations" on page 14
- "Patterns, Algebra, and Functions" on page 28

## Grade 1

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## Grade 2

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## Grade 3

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- "Measurement" on page 180
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- "Speed Games (Fluency)" on page 206

- "Probability and Discrete Mathematics" on page 208
- "Performance Tasks" on page 208

## Grade 6

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- "Number Sense and Operations" on page 220
- "Patterns, Algebra, and Functions" on page 236
- "Speed Games (Fluency)" on page 244
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## Grade 7

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- "Number Sense and Operations" on page 253
- "Patterns, Algebra, and Functions" on page 269
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## Grade 8

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- "Geometry" on page 288
- "Measurement" on page 293
- "Number Sense and Operations" on page 294
- "Patterns, Algebra, and Functions" on page 300
- "Speed Games (Fluency)" on page 311
- "Probability and Discrete Mathematics" on page 312
- "Performance Tasks" on page 314

# Geometry

Grade K		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE70	SMMA_LO_00541	Attributes of Two-Dimensional Figures	Identify the Figure That Is Different	Identify the figure that is a different color from a given figure.
GE42	SMMA_LO_00529	Attributes of Two-Dimensional Figures	Identify Two-Dimensional Figures by Name	Identify circles or squares by name.
GE45	SMMA_LO_00530	Attributes of Two-Dimensional Figures	Identify Two-Dimensional Figures by Name	Identify triangles or rectangles by name.
GE50	SMMA_LO_00531	Attributes of Two-Dimensional Figures	Identify Two-Dimensional Figures by Name	Identify a geometric figure (circle, triangle, rectangle, or square).
GE1	SMMA_LO_02320	Attributes of Two-Dimensional Figures	Identify Two-Dimensional Figures by Name	Select the shape (circle, square, rectangle, or triangle).
GE53	SMMA_LO_00514	Attributes of Two-Dimensional Figures	Match Figures Based on Their Attributes	Match simple geometric figures that have the same size, shape, and color.

Grade K		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE5	SMMA_LO_00515	Attributes of Two-Dimensional Figures	Match Figures Based on Their Attributes	Match pictures that are identical.
GE10	SMMA_LO_00516	Attributes of Two-Dimensional Figures	Match Figures Based on Their Attributes	Match geometric figures that have the same size and shape (simple figures).
GE12	SMMA_LO_00517	Attributes of Two-Dimensional Figures	Match Figures Based on Their Attributes	Match pictures with shapes that are alike.
GE57	SMMA_LO_00534	Attributes of Two-Dimensional Figures	Match Figures Based on Their Attributes	Move puzzle pieces to complete a puzzle (2 pieces).
GE14	SMMA_LO_02181	Attributes of Two-Dimensional Figures	Match Figures Based on Their Attributes	Compose simple shapes to form larger shapes.
GE90	SMMA_LO_00589	Attributes of Two-Dimensional Figures	Identify the Vertices of a Polygon	Identify corners (vertices) of polygons.
GE95	SMMA_LO_00596	Attributes of Two-Dimensional Figures	Identify the Vertices of a Polygon	Count the corners (vertices) of a polygon (3 to 7 corners).

Grade K		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE87	SMMA_LO_00587	Attributes of Two-Dimensional Figures	Identify Figures Based on Their Attributes	Identify figures with more or fewer than a given number of sides.
GE85	SMMA_LO_00586	Attributes of Two-Dimensional Figures	Count the Sides of a Polygon	Count the number of sides in a polygon.
ME90	SMMA_LO_00747	Attributes of Two-Dimensional Figures	Identify the Smaller or Larger Figure	Identify the smaller or bigger rectangle.
GE15	SMMA_LO_00518	Geometric Comparisons	Relate the Face of a Plane Figure to a Three-Dimensional Figure	Match the face of a geometric solid to a plane figure.
GE32	SMMA_LO_00524	Position and Location	Describe the Relative Positions of Objects	Identify the object on the top, in the middle, or on the bottom.
GE35	SMMA_LO_00525	Position and Location	Describe the Relative Positions of Objects	Identify the object on the left or the right.
GE40	SMMA_LO_00526	Position and Location	Describe the Relative Positions of Objects	Identify the picture on the left or right.



Grade K		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE55	SMMA_LO_00532	Position and Location	Describe the Relative Positions of Objects	Identify the object inside or outside a convex figure.
GE65	SMMA_LO_00540	Position and Location	Describe the Relative Positions of Objects	Identify the object that is the top, middle or bottom one.
GE72	SMMA_LO_00547	Attributes of Three-Dimensional Figures	Identify the Figure That Is Different	Identify the figure with a different shape.
GE80	SMMA_LO_00553	Attributes of Three-Dimensional Figures	Identify the Figure That Is Different	Identify the figure that has a different number of sides from a given figure.
GE76	SMMA_LO_00548	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Match a shape to a picture containing that shape.
GE77	SMMA_LO_00549	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Identify shapes that are alike.
GE75	SMMA_LO_02228	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Identify a real-world object that has a particular shape.

Grade K		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
NC66	SMMA_ LO_00959	Attributes of Three-Dimensional Figures	Identify Figures Based on Their Attributes	Identify the group with the greatest number of shapes of a given type (1 to 6).
ME75	SMMA_ LO_00736	Similarity and Congruence	Identify Congruent Two-Dimensional Figures	Identify the rectangle with the same size and shape as a given rectangle.

\* Math Concepts and Skills

"Default Math Scope and Sequence" on page 1

# Measurement

Grade K		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME60	SMMA_LO_00698	Money	Identify Coin Values	Identify nickels or dimes.
ME65	SMMA_LO_02208	Money	Identify Coin Values	Identify pennies or dimes.
NC93	SMMA_LO_00700	Time	Recognize and Order Days, Weeks, and Months	Enter the missing date on a calendar.
ME50	SMMA_LO_00697	Time	Tell Time Using an Analog Clock	Identify the hour or minute hand of a clock.
ME10	SMMA_LO_00689	Units of Measure	Compare and Order Objects by Capacity or Volume	Match amounts of liquid in containers (3 amounts).
ME45	SMMA_LO_00696	Units of Measure	Compare and Order Objects by Capacity or Volume	Identify the container with the greatest or least capacity.

Grade K		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME4	SMMA_LO_00687	Units of Measure	Compare the Lengths of Familiar Objects	Match objects of the same height (3 heights).
ME5	SMMA_LO_00688	Units of Measure	Compare the Lengths of Familiar Objects	Match objects of the same length (3 lengths).
ME25	SMMA_LO_00693	Units of Measure	Compare the Lengths of Familiar Objects	Given 3 objects, Identify the shortest or longest object.
ME30	SMMA_LO_00694	Units of Measure	Compare the Lengths of Familiar Objects	Identify the tallest object.
ME1	SMMA_LO_02321	Units of Measure	Compare the Lengths of Familiar Objects	Compare 2 objects and select which is longer or shorter.
ME20	SMMA_LO_00692	Units of Measure	Compare the Size of Familiar Objects	Identify a pair of objects that are not the same size.
ME40	SMMA_LO_00695	Units of Measure	Compare the Size of Familiar Objects	Identify the biggest or smallest object.

Grade K		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME2	SMMA_LO_02322	Units of Measure	Compare the Size of Familiar Objects	Arrange objects in order from smallest to largest.
ME95	SMMA_LO_00761	Units of Measure	Choose the Appropriate Measuring Instruments	Identify the tool for a particular use (thermometer, scale, clock).
ME48	SMMA_LO_02182	Units of Measure	Compare Measurable Attributes of Familiar Objects	Compare weight, height, and capacity of familiar objects.

\* Math Concepts and Skills

"Default Math Scope and Sequence" on page 1

# Number Sense and Operations

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC78	SMMA_ LO_00972	Number Sense	Determine Equivalent Number Values to 20	Find a number equal to 2 to 9 ones.
NC80	SMMA_ LO_00973	Number Sense	Determine Equivalent Number Values to 20	Enter the number of ones equal to number 1 to 9.
NC48	SMMA_ LO_00946	Number Sense	Compare Numbers to 10	Identify a number that is greater than or less than a spoken number (1 to 9).
NC52	SMMA_ LO_00947	Number Sense	Compare Numbers to 10	Identify the number with the greatest value (1 to 9).
NC50	SMMA_ LO_00941	Number Sense	Identify Ordinal Numbers to 5th	Identify the nth object in a sequence (first to fifth).
NC94	SMMA_ LO_00950	Number Sense	Order Numbers to 10	Order four numbers from least to greatest (1 to 9).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC4	SMMA_ LO_02312	Number Sense	Order Numbers to 10	Counting numbers (up to 9).
NC32	SMMA_ LO_00939	Number Sense	Sequence Numbers	Find the next number in a sequence, counting by 1's (1 to 5).
NC88	SMMA_ LO_00940	Number Sense	Sequence Numbers	Find the next number in a sequence, counting by 1's (1 to 5).
NC36	SMMA_ LO_00948	Number Sense	Sequence Numbers	Find the next number in a sequence, counting by 1's (1 to 9).
NC90	SMMA_ LO_00949	Number Sense	Sequence Numbers	Find the number that comes before a given number, counting by 1's (1 to 9).
NC91	SMMA_ LO_00951	Number Sense	Sequence Numbers	Find a missing number in a sequence, counting by 1's (1 to 20).
NC95	SMMA_ LO_00960	Number Sense	Sequence Numbers	Find a missing number in a sequence, counting by 1's (1 to 9).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC92	SMMA_ LO_00970	Number Sense	Sequence Numbers	Find a missing number in a sequence, counting by 1's (10 to 20).
NC96	SMMA_ LO_00982	Number Sense	Sequence Numbers	Find a missing number in a sequence, counting by 1's (11 to 50).
NC97	SMMA_ LO_00983	Number Sense	Sequence Numbers	Find a missing number in a sequence, counting by 1's (51 to 99).
NC6	SMMA_ LO_02315	Number Sense	Sequence Numbers	Choose the group that has a certain number of objects (2-9 objects).
NC68	SMMA_ LO_00929	Number Sense	Use Groups to Compare Numbers to 10	Make a group with the same number of objects as a given group (6 to 9 objects).
NC70	SMMA_ LO_00930	Number Sense	Use Groups to Compare Numbers to 10	Make a group with one more object than a given group (six to nine objects).
NC72	SMMA_ LO_00931	Number Sense	Use Groups to Compare Numbers to 10	Make a group with one fewer object than a given group (6 to 9 objects).



Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC73	SMMA_ LO_00953	Number Sense	Use Groups to Compare Num- bers to 10	Create a set with the same, more, or fewer number of objects than a given group (1 to 9 objects).
NC74	SMMA_ LO_00954	Number Sense	Use Groups to Compare Num- bers to 10	Create a set with one more object than a given set (1 to 9 objects).
NC75	SMMA_ LO_00955	Number Sense	Use Groups to Compare Num- bers to 10	Create a set with one fewer object than a given set (1 to 9 objects).
ME30	SMMA_ LO_02325	Number Sense	Use Groups to Compare Num- bers to 10	Compare 2 groups of objects and select which has more or less.
NC54	SMMA_ LO_00922	Number Sense	Use Groups to Compare Num- bers to 5	Identify a set with the same number of objects as a given set (1 to 5 objects).
NC56	SMMA_ LO_00923	Number Sense	Use Groups to Compare Num- bers to 5	Identify a group with more objects than a given group (1 to 5 objects).
NC58	SMMA_ LO_00924	Number Sense	Use Groups to Compare Num- bers to 5	Identify a group with fewer objects than a given group (1 to 5 objects).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC60	SMMA_ LO_00926	Number Sense	Use Groups to Compare Num- bers to 5	Make a set with the same number of objects as a given set (1 to 5 objects).
NC62	SMMA_ LO_00927	Number Sense	Use Groups to Compare Num- bers to 5	Make a group with one more object than a given group (one to five objects).
NC64	SMMA_ LO_00928	Number Sense	Use Groups to Compare Num- bers to 5	Make a group with one fewer object than a given group (1 to 5 objects).
NC82	SMMA_ LO_02094	Number Sense	Relate Words, Models, or Num- bers to 10	Decompose numbers from 11 to 19 into ten ones and some further ones.
NC84	SMMA_ LO_02095	Number Sense	Relate Words, Models, or Num- bers to 10	Compose numbers from 11 to 19 given ten ones and some further ones by using objects.
AD75	SMMA_ LO_02097	Number Sense	Relate Words, Models, or Num- bers to 10	Model the number that makes 10 when added to a given number from 1 to 9; then identify the number.
AD65	SMMA_ LO_02096	Number Sense	Connect Pictorial Model with Addition Number Sentence	Decompose numbers 2-10 into pairs in more than one way by using objects.

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC34	SMMA_ LO_02092	Number Sense	Count the Objects	Count objects by pairing each object with one number 1 to 10; determine how many objects there are.
NC38	SMMA_ LO_02093	Number Sense	Count the Objects	Count objects by pairing each object with one number 1 to 10; determine how many objects there are when 1 more is added.
NC5	SMMA_ LO_02314	Number Sense	Count the Objects	Count objects (2-9 objects).
NC7	SMMA_ LO_02316	Number Sense	Count the Objects	Add 1 to 3 objects to an existing row of objects and then tell the total number of objects.
NC98	SMMA_ LO_00985	Number Sense	Order Numbers to 100	Identify the group of numbers that shows counting by 1s (two digit).
AD25	SMMA_ LO_00003	Operations with Numbers	Add Whole Numbers Using Sets	Count two sets of objects to find the total (sums 2 to 4).
AD30	SMMA_ LO_00004	Operations with Numbers	Add Whole Numbers Using Sets	Count two sets of objects to find the total (sums 4 to 6).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD50	SMMA_ LO_00007	Operations with Numbers	Add Whole Numbers Using Sets	Count objects in two sets and add (sums 1 to 5).
AD60	SMMA_ LO_00008	Operations with Numbers	Add Whole Numbers Using Sets	Count the objects in two sets and add (sums 6 to 10).
AD35	SMMA_ LO_00005	Operations with Numbers	Add Whole Numbers Using Sets	Count two sets of objects to find the total (sums 2 to 5).
AD40	SMMA_ LO_00006	Operations with Numbers	Add Whole Numbers Using Sets	Count two sets of objects to find the total (sums 6 to 10).
cmp01	SMMA_ LO_02313	Operations with Numbers	Add Whole Numbers Using Sets	Add 1 to 3 objects to an existing row of objects.
PS75	SMMA_ LO_01228	Operations with Numbers	Connect Pictoral Model with Addition Number Sentence	Identify a picture that represents an addition problem (sums 2 to 6).
AD70	SMMA_ LO_00036	Operations with Numbers	Connect Pictoral Model with Addition Number Sentence	Write an addition number sentence to represent a picture (sums 1 to 9).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD2	SMMA_ LO_02326	Operations with Numbers	Connect Pictorial Model with Addition Number Sentence	Solve addition problems within 5 using drawings.
WP50	SMMA_ LO_01535	Operations with Numbers	Solve Addition/Subtraction Problems in Context	Solve a problem in context by adding or subtracting 1.
SU25	SMMA_ LO_01411	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem in context (minuends 2 to 5, pictorial models).
SU50	SMMA_ LO_01412	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem in context (minuends 2 to 5, pictorial models).
WP75	SMMA_ LO_01536	Operations with Numbers	Solve Subtraction Problems in Context	Act out the solution to a subtraction problem in context (minuends 1 to 6).
SU1	SMMA_ LO_02327	Operations with Numbers	Solve Subtraction Problems in Context	Solve subtraction problems within 5 using drawings.
SU70	SMMA_ LO_01413	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 2 to 10).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU80	SMMA_ LO_01416	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 0 to 5).
AD90	SMMA_ LO_00010	Operations with Numbers	Add Basic Math Facts	Add using basic math facts (sums 1 to 5).
AD85	SMMA_ LO_00011	Operations with Numbers	Add Basic Math Facts Hori- zontally	Add using basic math facts displayed horizontally (sums 2 to 5).
AD95	SMMA_ LO_00013	Operations with Numbers	Add Basic Math Facts Hori- zontally	Add using basic math facts displayed horizontally (sums 6 to 10).
SU75	SMMA_ LO_01414	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Identify the expression that represents a picture (min- uends 2 to 9).
SU90	SMMA_ LO_01422	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Identify the pictorial solution to a subtraction problem (minuends 2 to 9).
SU85	SMMA_ LO_01423	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Identify the pictorial solution to a problem in context (min- uends 4 to 9).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP25	SMMA_ LO_01542	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Identify the picture that represents a subtraction problem in context (minuends 2 to 10).
AD80	SMMA_ LO_01863	Operations with Numbers	Solve Addition Problems in Context	Model and apply joining stories to solve problems (sums 1 to 9).
SU77	SMMA_ LO_01415	Operations with Numbers	Subtract Using Basic Math Facts Horizontally	Subtract using basic math facts displayed horizontally (minuends 0 to 5).
SU95	SMMA_ LO_01417	Operations with Numbers	Subtract Using Basic Math Facts Horizontally	Subtract using basic math facts displayed horizontally (minuends 6 to 9).
AD82	SMMA_ LO_02183	Operations with Numbers	Relate Addition Problems to Pictorial Models	Addition and subtraction word problems within 10 with both addends unknown.
NC86	SMMA_ LO_00971	Operations with Numbers	Skip Counting by 5s or 10s	Find a missing number in a sequence, counting by 10's (10 to 100, visual support).
NC12	SMMA_ LO_00002	Place Value	Recognize Number Values to 10 Using Concrete Objects	Enter the number shown (1 to 9).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC15	SMMA_ LO_00936	Place Value	Recognize Number Values to 10 Using Concrete Objects	Count specific objects within a larger set (1 to 6 objects).
NC40	SMMA_ LO_00943	Place Value	Recognize Number Values to 10 Using Concrete Objects	Count objects not arranged in a row (6 to 9 objects).
NC42	SMMA_ LO_00945	Place Value	Recognize Number Values to 10 Using Concrete Objects	Make a group with 6 to 9 objects.
NC77	SMMA_ LO_00952	Place Value	Recognize Number Values to 10 Using Concrete Objects	Match each set of tally marks to a total (1 to 9).
NC44	SMMA_ LO_00957	Place Value	Recognize Number Values to 10 Using Concrete Objects	Count objects arranged in a row (one to nine objects).
NC46	SMMA_ LO_00958	Place Value	Recognize Number Values to 10 Using Concrete Objects	Count specific objects within a larger set (6 to 9 objects).
NC10	SMMA_ LO_00932	Place Value	Recognize Number Values to 5	Enter the number shown (1 to 5).



Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC8	SMMA_ LO_00001	Place Value	Recognize Number Values to 5 Using Concrete Objects	Enter the number shown (0 to 4).
NC13	SMMA_ LO_00933	Place Value	Recognize Number Values to 5 Using Concrete Objects	Count objects arranged in a row (1-5 objects).
NC14	SMMA_ LO_00935	Place Value	Recognize Number Values to 5 Using Concrete Objects	Count objects not arranged in a row (1 to 5 objects).
NC16	SMMA_ LO_00938	Place Value	Recognize Number Values to 5 Using Concrete Objects	Make a group with one to five objects.
NC18	SMMA_ LO_00956	Place Value	Recognize Number Values to 5 Using Concrete Objects	Identify the group of objects that represent a number (1 to 5 objects).
NC30	SMMA_ LO_00921	Place Value	Recognize Number Values to 5 Using One-to-One Cor- respondence	Represent a number of objects in counting order (2 to 5 objects).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC59	SMMA_ LO_00925	Place Value	Recognize Number Values to 5 Using One-to-One Correspondence	Move objects to show a one-to-one correspondence (1 to 5 objects).
NC11	SMMA_ LO_00934	Place Value	Relate Words, Models, or Numbers to 5	Match a digit to a set with that number of objects (1 to 5).
NC9	SMMA_ LO_00937	Place Value	Relate Words, Models, or Numbers to 5	Identify a number from a spoken number (1 to 20).
NC26	SMMA_ LO_00944	Place Value	Relate Words, Models, or Numbers to 10	Identify a number from a spoken number (6 to 9).
NC22	SMMA_ LO_00964	Place Value	Relate Words, Models, or Numbers to 10	Identify the number of objects for a word name. (1 to 9 objects).
NC25	SMMA_ LO_00965	Place Value	Relate Words, Models, or Numbers to 10	Identify a number, model, or word with the same value (1 to 9).
NC20	SMMA_ LO_00942	Place Value	Recognize Number Values to 10	Enter the number shown (1 to 9).

Grade K		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC1	SMMA_ LO_02317	Place Value	Recognize Number Values to 10	Select the numbers in a group of symbols (1-9).
NC2	SMMA_ LO_02318	Place Value	Recognize Number Values to 10	Select the numeral (1-9).
NC3	SMMA_ LO_02319	Place Value	Recognize Number Values to 10	Select the number name (1-9).
NC53	SMMA_ LO_02227	Place Value	Relate Numbers to Place Value Models	Represent numbers as a unit of 10 and some ones.
AD45	SMMA_ LO_00035	Number Theory	Add Zero	Add zero to a number (sums 1 to 9).

\* Math Concepts and Skills

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# Patterns, Algebra, and Functions

Grade K		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS50	SMMA_LO_01227	Logical Reasoning	Identify the Unrelated Figure	Use logical reasoning to identify the item that does not belong in a group.
GE22	SMMA_LO_00520	Patterns	Extend a Pattern of Geometric Figures	Extend a 1-2-1-2 pattern of geometric figures.
GE30	SMMA_LO_00522	Patterns	Extend a Pattern of Geometric Figures	Extend a 1-1-2-2 pattern of geometric figures.
GE20	SMMA_LO_00519	Patterns	Extend a Pattern of Pictures	Extend a 1-2-1-2 pattern of pictures.
GE25	SMMA_LO_00521	Patterns	Extend a Pattern of Pictures	Extend a 1-1-2-2 pattern of pictures.
GE2	SMMA_LO_02323	Patterns	Extend a Pattern of Pictures	Determine what comes next in an AB pattern.

Grade K		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
GE3	SMMA_LO_02324	Patterns	Extend a Pattern of Pictures	Determine what comes next in an AAB pattern.
GE60	SMMA_LO_00539	Patterns	Match a Pattern of Geometric Figures	Match patterns of geometric figures.

\* Math Concepts and Skills

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# Geometry

Grade 1		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE115	SMMA_LO_00550	Attributes of Three-Dimensional Figures	Identify Figures Based on Their Attributes	Identify triangles, squares, rectangles, and pentagons.
GE170	SMMA_LO_00565	Attributes of Three-Dimensional Figures	Identify Figures Based on Their Attributes	Identify a shape by two positive tests e.g. red, circle.
GE195	SMMA_LO_02232	Attributes of Three-Dimensional Figures	Identify Figures Based on Their Attributes	Identify 2- or 3-dimensional shapes in real-world objects.
GE105	SMMA_LO_00544	Attributes of Three-Dimensional Figures	Identify Two-Dimensional Figures by Name	Identify circles or squares by name.
GE112	SMMA_LO_00546	Attributes of Three-Dimensional Figures	Identify Two-Dimensional Figures by Name	Identify triangles or rectangles by name.
GE125	SMMA_LO_00554	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Match a plane figure to a geometric design that uses the figure.

Grade 1		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE141	SMMA_LO_00557	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Identify matching congruent figures under rotation and/or reflection.
GE165	SMMA_LO_00564	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Identify puzzle pieces needed to make a given shape, and then complete the puzzle (4 to 6 pieces).
GE177	SMMA_LO_00567	Attributes of Three-Dimensional Figures	Match Figures Based on Their Attributes	Identify matching congruent geometric solids.
GE100	SMMA_LO_00543	Position and Location	Describe the Relative Positions of Objects	Identify the object that is the top, middle, or bottom one.
GE120	SMMA_LO_00552	Position and Location	Describe the Relative Positions of Objects	Determine whether points are outside, inside, or on a geometric figure.
GE110	SMMA_LO_00545	Position and Location	Match Congruent Two-Dimensional Figures	Match same size and shape (congruent) irregular polygons.
GE130	SMMA_LO_00555	Position and Location	Match Similar Figures	Match similar irregular polygons.

Grade 1		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE175	SMMA_ LO_00566	Position and Location	Match Similar Figures	Match similar figures in different orientations.
GE155	SMMA_ LO_00561	Symmetry	Figures That Show Symmetry	Match halves of figures (left and right).
GE160	SMMA_ LO_00563	Symmetry	Figures That Show Symmetry	Match halves of figures (top and bottom).
GE180	SMMA_ LO_00580	Attributes of Two-Dimensional Figures	Identify Open and Closed Figures	Identify open and closed figures.
GE187	SMMA_ LO_02157	Attributes of Two-Dimensional Figures	Identify Figures Based on Their Attributes	Distinguish between defining and non-defining attributes.
GE140	SMMA_ LO_02231	Attributes of Two-Dimensional Figures	Identify Figures Based on Their Attributes	Select a sketch of a shape (triangle, square, rectangle, hexagon) based on its attributes.
GE185	SMMA_ LO_00594	Similarity and Congruence	Match Similar Figures	Match compound figures that have the same shape (different sizes).



Grade 1		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE196	SMMA_ LO_00611	Similarity and Con- gruence	Draw a Congruent Two- Dimensional Figure	Connect points on a geoboard to copy a figure.

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## Measurement

Grade 1		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME177	SMMA_ LO_00727	Money	Identify Coin Equivalencies	Identify the coin equivalent to 5, 10, or 25 pennies.
ME105	SMMA_ LO_00702	Money	Identify Coin Values	Identify the coin worth 1, 5, 10, or 25 cents.
ME140	SMMA_ LO_00714	Time	Tell Time Using an Analog Clock	Tell time to the hour using an analog clock.

Grade 1		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME165	SMMA_ LO_00724	Time	Tell Time Using an Analog Clock	Tell time to the half-hour using an analog clock.
ME150	SMMA_ LO_00716	Time	Use Analog and Digital Clocks to Tell Time	Tell time to the hour using digital and analog clocks.
ME125	SMMA_ LO_02147	Units of Measure	Compare the Lengths of Familiar Objects	Order three objects by length.
ME180	SMMA_ LO_00729	Units of Measure	Choose the Appropriate Customary Units of Length, Capacity, and Weight	Select the appropriate standard unit of measurement for length, capacity, and weight (customary).
ME120	SMMA_ LO_00709	Units of Measure	Compare the Size of Familiar Objects	Identify the object that is a different length.
ME132	SMMA_ LO_00712	Units of Measure	Compare the Size of Familiar Objects	Identify the object that is a different height.
ME112	SMMA_ LO_00705	Units of Measure	Measure Height and Length in Non-standard Units	Count to find how long or tall (2 to 9 nonstandard units).

Grade 1		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME135	SMMA_ LO_00713	Units of Measure	Measure Height and Width in Non-standard Units	Count to find the height and width (2 to 5 non-standard units).
ME157	SMMA_ LO_00721	Units of Measure	Measure Height and Width in Non-standard Units	Estimate the height and width (2 to 5 nonstandard units).
ME170	SMMA_ LO_00725	Units of Measure	Measure Height and Width in Non-standard Units	Identify an object given the height and width in non-standard units.
ME130	SMMA_ LO_00710	Units of Measure	Measure Height in Nonstandard Units	Find the height (2 to 9 nonstandard units).
ME100	SMMA_ LO_00701	Units of Measure	Measure Length in Nonstandard Units	Identify the group of objects that is 1 to 5 non-standard units long or tall.
ME155	SMMA_ LO_00720	Units of Measure	Measure Length in Nonstandard Units	Find the total length of two objects (nonstandard units, sums 2 to 5).
ME190	SMMA_ LO_00777	Units of Measure	Measure Length in Nonstandard Units	Measure the length of an object (2 to 7 non-standard units).

Grade 1		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME115	SMMA_ LO_00708	Units of Measure	Measure Perimeter in Nonstandard Units	Count to find the perimeter (3 to 9 nonstandard units).
ME185	SMMA_ LO_00732	Units of Measure	Measure Distance in Nonstandard Units	Find the distance between two objects (2 to 8 non- standard units).
ME195	SMMA_ LO_00812	Units of Measure	Choose the Appropriate Measuring Instruments	Select the appropriate ruler to measure vertical or horizontal lengths.
ME193	SMMA_ LO_02187	Units of Measure	Measure Length in Customary Units	Find the length of objects using concrete models for standard units of length.

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# Number Sense and Operations

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC125	SMMA_ LO_00968	Number Sense	Relate Ordinal Words and Numbers	Identify the ordinal word for the nth object in a sequence (first to fifth).
NC175	SMMA_ LO_00328	Number Sense	Compare Numbers Using Symbols	Compare numbers using < or > symbols (20 to 99).
EQ150	SMMA_ LO_00325	Number Sense	Compare Numbers Using Symbols	Compare numbers using < or > symbols (1 to 19).
NC164	SMMA_ LO_00994	Number Sense	Compare Numbers to 10	Identify two numbers that make an inequality true (0 to 9).
NC180	SMMA_ LO_00997	Number Sense	Compare Numbers to 100	Identify two numbers that make an inequality true (two-digit).
NC160	SMMA_ LO_01049	Number Sense	Identify Numbers Using Clues	Find two numbers when given place value clues (two-digit).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
EQ125	SMMA_ LO_00322	Number Theory	Add/Subtract Using Fact Families	Complete fact families with four facts (sums 3 to 10).
NC102	SMMA_ LO_01857	Number Theory	Add/Subtract Using Fact Families	Create a fact family (addition and subtraction).
NC104	SMMA_ LO_01035	Number Theory	Add/Subtract Using Fact Families	Identify a missing number in an addition and subtraction fact family.
AD100	SMMA_ LO_00012	Operations with Numbers	Add Basic Math Facts	Add two addends (sums 6 to 10).
AD120	SMMA_ LO_00022	Operations with Numbers	Add Basic Math Facts	Add vertically using basic math facts (sums 11 to 18).
WP110	SMMA_ LO_01540	Operations with Numbers	Add Basic Math Facts	Solve an addition problem in context (same objects, sums 2 to 5).
AD105	SMMA_ LO_00014	Operations with Numbers	Add Basic Math Facts	Add using basic math facts (addends 0 to 5, sums 1 to 5).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD110	SMMA_ LO_00015	Operations with Numbers	Add Basic Math Facts	Add 1 to a number (sums 1 to 10).
AD112	SMMA_ LO_00016	Operations with Numbers	Add Basic Math Facts	Add two addends in words (one-digit addends, sums 6 to 10).
AD140	SMMA_ LO_00024	Operations with Numbers	Add Basic Math Facts	Add two numbers presented in words using basic math facts (sums 1 to 18).
AD150	SMMA_ LO_00026	Operations with Numbers	Add Basic Math Facts	Add three addends (sums 2 to 5).
AD155	SMMA_ LO_00027	Operations with Numbers	Add Basic Math Facts	Add three addends (audio presentation, sums 3 to 5).
AD157	SMMA_ LO_00028	Operations with Numbers	Add Basic Math Facts	Add three addends (sums 6 to 10).
AD165	SMMA_ LO_00030	Operations with Numbers	Add Basic Math Facts	Add four addends (one-digit addends, sums 3 to 10).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD172	SMMA_ LO_00031	Operations with Numbers	Add Basic Math Facts	Add three addends (one-digit addends, sums 11 to 19).
AD170	SMMA_ LO_00032	Operations with Numbers	Add Basic Math Facts	Add three addends presented horizontally (one-digit addends, sums 10 to 19).
AD177	SMMA_ LO_00039	Operations with Numbers	Add Basic Math Facts	Add a two-digit number to a one-digit number by counting (sums up to 18), given in words.
AD122	SMMA_ LO_00041	Operations with Numbers	Add Basic Math Facts	Add two addends vertically (sums 10 to 18).
AD142	SMMA_ LO_00045	Operations with Numbers	Add Basic Math Facts	Add 9 to a number (sums 10 to 18), given in words.
AD130	SMMA_ LO_00023	Operations with Numbers	Add Basic Math Facts Horizontally	Add using basic math facts displayed horizontally (sums 10 to 18).
AD160	SMMA_ LO_00029	Operations with Numbers	Add Basic Math Facts Horizontally	Add three addends displayed horizontally (sums 6 to 10).



Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD132	SMMA_ LO_00042	Operations with Numbers	Add Basic Math Facts Hori- zontally	Add using basic math facts displayed horizontally (sums 10 to 18).
WP150	SMMA_ LO_01546	Operations with Numbers	Add Basic Math Facts in Con- text	Solve a problem in context by finding a missing addend (sums 2 to 5).
WP175	SMMA_ LO_01549	Operations with Numbers	Add Basic Math Facts in Con- text	Solve an addition problem with three addends in context (sums 3 to 10).
WP190	SMMA_ LO_01557	Operations with Numbers	Add Basic Math Facts in Con- text	Solve an addition problem with three addends in context (sums 3 to 10).
WP180	SMMA_ LO_01550	Operations with Numbers	Add Basic Math Facts in Con- text	Solve a problem in context by finding a missing addend (sums 2 to 5).
AD117	SMMA_ LO_00020	Operations with Numbers	Add Consecutive Addends	Add two consecutive addends (one-digit addends, sums 1 to 17).
AD125	SMMA_ LO_00021	Operations with Numbers	Add Consecutive Addends	Add two consecutive addends displayed horizontally (one-digit addends, sums 1 to 17).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
ME175	SMMA_ LO_00726	Operations with Numbers	Combine Sums to 10	Identify sets of objects that combined have a given sum (sums 6 to 9).
NC196	SMMA_ LO_02020	Operations with Numbers	Relate Addition/Subtraction Problems to Pictorial Models (Base Ten)	Count the number of equal parts in a fractional model (2 to 4 parts).
EQ100	SMMA_ LO_00321	Operations with Numbers	Relate Addition/Subtraction Problems to Pictorial Models (Base Ten)	Identify the operation from pictures and contexts up to 20.
PS125	SMMA_ LO_01244	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Identify a picture that represents a subtraction problem (one or two-digit).
NC108	SMMA_ LO_00981	Operations with Numbers	Skip Counting by 5s or 10s	Find a missing number in a sequence, counting by 10's (10 to 100).
NC192	SMMA_ LO_00992	Operations with Numbers	Skip Counting by 5s or 10s	Find a missing number in a sequence, counting by 10's (two-digit, non multiples of 10).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP100	SMMA_ LO_01537	Operations with Numbers	Solve Addition Problems in Context	Act out the solution to an addition problem in context (three addends, sums 1 to 9).
WP125	SMMA_ LO_01544	Operations with Numbers	Solve Addition Problems in Context	Solve an addition problem in context (different objects, sums 2 to 5).
WP140	SMMA_ LO_01545	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem in context (minuends 2 to 5).
SU167	SMMA_ LO_01439	Operations with Numbers	Solve Subtraction Problems in Context	Identify the number sentence that solves a subtraction problem in context (minuends 11 to 18, subtrahends 1 to 9).
SU100	SMMA_ LO_01418	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 6 to 9).
SU105	SMMA_ LO_01424	Operations with Numbers	Subtract Using Basic Math Facts	Subtract a number from 10 (subtrahends 1 to 9).
SU145	SMMA_ LO_01425	Operations with Numbers	Subtract Using Basic Math Facts	Subtract a number from its double (differences 1 to 9).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU115	SMMA_ LO_01419	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 1 to 9).
SU110	SMMA_ LO_01420	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (differences are 0).
SU112	SMMA_ LO_01421	Operations with Numbers	Subtract Using Basic Math Facts	Subtract 1 from a number (minuends 1 to 9).
SU122	SMMA_ LO_01427	Operations with Numbers	Subtract Using Basic Math Facts	Subtract 1 from a number (two-digit minuends, no regrouping, presented vertically).
SU120	SMMA_ LO_01430	Operations with Numbers	Subtract Using Basic Math Facts	Subtract (student choice, minuends 10 to 15, subtrahends 0 to 5, no regrouping).
SU130	SMMA_ LO_01433	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (student choice, minuends 16 to 19, subtrahends 1 to 9).
SU157	SMMA_ LO_01434	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 15 to 18, subtrahends 6 to 9).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU155	SMMA_ LO_01435	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 11 to 19, subtrahends 1 to 8).
SU165	SMMA_ LO_01436	Operations with Numbers	Subtract Using Basic Math Facts	Subtract using basic math facts (minuends 11 to 18, subtrahends 1 to 9).
SU150	SMMA_ LO_01444	Operations with Numbers	Subtract Using Basic Math Facts	Subtract vertically using basic math facts (minuends 15 to 18, subtrahends 6 to 9).
SU160	SMMA_ LO_01443	Operations with Numbers	Subtract Using Basic Math Facts	Subtract a one-digit number from a two-digit number displayed horizontally (minuends 11 to 19, subtrahends 1 to 9).
SU125	SMMA_ LO_01445	Operations with Numbers	Subtract Using Basic Math Facts	Subtract vertically (minuends 11 to 19, subtrahends 1 to 9, no regrouping).
SU117	SMMA_ LO_01429	Operations with Numbers	Subtract Using Basic Math Facts Horizontally	Subtract using basic math facts displayed horizontally (minuends 10 to 14, subtrahends 1 to 9).
SU195	SMMA_ LO_01426	Operations with Numbers	Subtract Multiples of 10	Subtract two multiples of 10 (student choice, minuends 20 to 90, subtrahends 10 to 80).

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU132	SMMA_ LO_01441	Operations with Numbers	Subtract Multiples of 10	Subtract 10 from a two-digit number (student choice, minuends 11 to 19).
SU135	SMMA_ LO_01442	Operations with Numbers	Subtract Multiples of 10	Subtract 10 from a number (minuends 11 to 19, horizontal presentation).
PS100	SMMA_ LO_01229	Operations with Numbers	Write Addition Number Sentences	Write a number sentence for an addition problem (sums 2 to 5).
PS110	SMMA_ LO_01230	Operations with Numbers	Write Addition Number Sentences	Write a number sentence for an addition problem (sums 2 to 10).
AD115	SMMA_ LO_00017	Operations with Numbers	Add Doubles	Add doubles (sums 2 to 18).
AD135	SMMA_ LO_00019	Operations with Numbers	Add Doubles	Add doubles (sums 4 to 18).
AD175	SMMA_ LO_00038	Operations with Numbers	Add Multiples of 10	Add ten to a number (sums 11 to 19), given in words.

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
PS190	SMMA_ LO_01255	Operations with Numbers	Connect Pictoral Model with Addition/Subtraction Number Sentence	Identify the picture that can be used to solve an addition or subtraction problem.
AD195	SMMA_ LO_02010	Operations with Numbers	Connect Pictoral Model with Addition/Subtraction Number Sentence	Relate counting to addition and subtraction.
AD179	SMMA_ LO_02022	Operations with Numbers	Add Using Basic Math Facts	Use the Associative Property of Addition to add two num- bers by regrouping the numbers into a ten and some ones.
SU140	SMMA_ LO_02026	Operations with Numbers	Add Using Basic Math Facts	Subtract two numbers by regrouping the numbers into a ten and some ones.
AD180	SMMA_ LO_02135	Operations with Numbers	Add Using Basic Math Facts	Apply the Associative Property of Addition to add three numbers.
SU142	SMMA_ LO_02023	Operations with Numbers	Find the Missing Addend in a Number Sentence	Solve a subtraction problem by finding the missing addend.

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC100	SMMA_LO_02021	Operations with Numbers	Add/Subtract Using Fact Families	Apply the Commutative Property of Addition as a strategy to add two numbers; use fact families as a strategy to subtract two numbers.
NC199	SMMA_LO_02160	Operations with Numbers	Determine Equivalent Number Values to 100	Decompose two-digit numbers in multiple ways.
NC132	SMMA_LO_00975	Place Value	Identify Place Value to 100	Enter the number of tens for a given multiple of ten (10 to 90).
NC148	SMMA_LO_00979	Place Value	Determine Equivalent Number Values to 100	Enter the number equal to a given number of ones and tens (0 to 9 tens, 1 to 9 ones).
NC150	SMMA_LO_00980	Place Value	Determine Equivalent Number Values to 100	Enter how many tens and ones for a number (two-digit).
NC190	SMMA_LO_00991	Place Value	Determine Equivalent Number Values to 100	Identify a two-digit number, model, or expression that has a different value.
NC136	SMMA_LO_00974	Place Value	Determine Equivalent Number Values to 100	Enter the number equal to 1 to 9 tens.



Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC188	SMMA_ LO_00990	Place Value	Identify Place Value to 1,000,000	Find two numbers when given place value clues (two-digit).
NC144	SMMA_ LO_00976	Place Value	Recognize Number Values to 100 Using Concrete Objects	Find the number of a set of objects (grouped tens and ones; two-digit).
NC116	SMMA_ LO_00977	Place Value	Relate Words, Models, or Numbers to 100	Identify a written number from a spoken number (two-digit).
NC156	SMMA_ LO_00978	Place Value	Represent Number to 100 Using Base-Ten Blocks	Show a number using base-ten blocks (two-digit).
NC120	SMMA_ LO_02017	Place Value	Relate Addition/Subtraction Problems to Pictorial Models (Base Ten)	Given a number (1-9) of objects, determine how many more objects are needed to make a ten.
NC128	SMMA_ LO_02019	Place Value	Relate Numbers to Place Value Models	Model multiples of 10 (from 10 to 90) with place value blocks.
NC124	SMMA_ LO_02018	Place Value	Relate Numbers to Place Value Models	Model the numbers from 11 to 19 with place value blocks.

Grade 1		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC140	SMMA_ LO_00995	Place Value	Determine Place Value of Digits	Identify a number with a given digit in the ones or tens place.
NC112	SMMA_ LO_01001	Place Value	Relate Words, Models or Numbers to 101	Enter the number for a word name (two-digit).
NC117	SMMA_ LO_02229	Place Value	Relate Words, Models or Numbers to 101	Represent numbers in standard, expanded and word form.
WP160	SMMA_ LO_01548	Estimation	Estimate Sums to Nearest Ten	Estimate the number of objects to the nearest ten (21 to 49 objects).
EQ175	SMMA_ LO_02024	Written Equations	Determine Whether an Equation is True or False	Determine if equations involving addition and subtraction are true or false.

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# Patterns, Algebra, and Functions

Grade 1		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AD185	SMMA_LO_00052	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (three addends, sums 1 to 9).
AD187	SMMA_LO_00066	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (three addends, sums 10 to 19).
PS150	SMMA_LO_01232	Open Sentences	Find the Missing Addend in a Number Sentence	Use a picture to solve a missing addend problem (sums 2 to 6).
AD145	SMMA_LO_00037	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence. (sums 2 to 9).
AD190	SMMA_LO_00048	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (sums 10 to 18).
SU172	SMMA_LO_01440	Open Sentences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a subtraction number sentence (minuends 0 to 9).

Grade 1		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
SU180	SMMA_ LO_01451	Open Sen- tences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a subtraction number sen- tence (minuends 10 to 14).
SU185	SMMA_ LO_01455	Open Sen- tences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a subtraction number sen- tence (minuends 15 to 18).
SU190	SMMA_ LO_01468	Open Sen- tences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a subtraction number sen- tence (minuends 11 to 19).
SU170	SMMA_ LO_01432	Open Sen- tences	Find the Missing Subtrahend in a Number Sentence	Find the missing subtrahend in a subtraction number sentence (minuends 0 to 9).
SU175	SMMA_ LO_01446	Open Sen- tences	Find the Missing Subtrahend in a Number Sentence	Find the missing subtrahend in a subtraction number sentence (minuends 10 to 14).
SU177	SMMA_ LO_01449	Open Sen- tences	Find the Missing Subtrahend in a Number Sentence	Find the missing subtrahend in a subtraction number sentence (minuends 15 to 18).
SU187	SMMA_ LO_01464	Open Sen- tences	Find the Missing Subtrahend in a Number Sentence	Find the missing subtrahend in a subtraction number sentence (minuends 11 to 19).

Grade 1		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
GE145	SMMA_ LO_00558	Patterns	Extend a Pattern of Congruent Shapes	Extend a 1-1-2 or 1-2-2 pattern of congruent shapes.
GE135	SMMA_ LO_00556	Patterns	Extend a Pattern of Pictures	Extend a 1-2-2 pattern of pictures.
GE150	SMMA_ LO_00560	Patterns	Extend a Pattern of Similar Figures	Extend a 1-2-3 pattern of similar figures.
PS175	SMMA_ LO_01239	Written Expressions	Identify the Expression That Is a Translation of the Written Phrase	Choose the expression that can represent a problem with extra information; then solve (addition or subtraction).

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# Data Analysis

Grade 2		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
NC184	SMMA_ LO_00998	Measures of Center and Spread	Identify Numbers within a Range	Find two numbers within a range (two-digit).
PR265	SMMA_ LO_01144	Graph, Chart, and Table Construction	Collect, Organize, and Analyze Data	Collect, tally, and graph the results generated by a spinner.
PR280	SMMA_ LO_01150	Graph, Chart, and Table Construction	Construct a Horizontal Bar Graph Using Data from a Vertical Bar Graph	Construct a horizontal bar graph based on data from a vertical bar graph.
AP250	SMMA_ LO_01643	Graph, Chart, and Table Construction	Construct a Line Graph	Choose a title for a line plot and label the units.

Grade 2		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR270	SMMA_ LO_01146	Graph, Chart, and Table Con- struction	Construct a Vertical Bar Graph Using Data from a Hori- zontal Bar Graph	Construct a vertical bar graph based on data from a hori- zontal bar graph.
AP225	SMMA_ LO_00135	Graph, Chart, and Table Con- struction	Determine the Greatest and Least Answers in a Pic- tograph	Determine the most or the least from a horizontal or ver- tical pictograph (four to six items).
PR245	SMMA_ LO_01136	Graph, Chart, and Table Con- struction	Identify the Chart or Table That Represents Data in a Bar Graph	Identify the table that represents the data in a vertical bar graph.
PR250	SMMA_ LO_01138	Graph, Chart, and Table Con- struction	Label Categories in a Vertical Bar Graph Using Data from a Chart or Table	Label the categories of a vertical bar graph based on data from a table.
PR240	SMMA_ LO_01135	Graph, Chart, and Table Con- struction	Read and Interpret a Vertical Bar Graph	Identify the vertical bar graph that shows a strictly increasing or decreasing trend.

Grade 2		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR275	SMMA_ LO_01148	Graph, Chart, and Table Con- struction	Read and Interpret a Vertical Bar Graph	Identify the number of categories in a vertical bar graph that are less than, equal to, and greater than a given value.
AP200	SMMA_ LO_00131	Graph, Chart, and Table Con- struction	Read and Interpret Horizontal or Vertical Pictographs	Read and interpret a horizontal or vertical pictograph (four to six items).
AP275	SMMA_ LO_00138	Graph, Chart, and Table Con- struction	Read and Interpret Horizontal or Vertical Pictographs	Read and interpret a horizontal or vertical pictograph (four to six items).
WP235	SMMA_ LO_01554	Graph, Chart, and Table Con- struction	Read and Interpret Tables and Charts	Identify the value that is greater than one number and less than another in context.
PR290	SMMA_ LO_01154	Graph, Chart, and Table Con- struction	Read and Interpret Bar Graphs	Analyze a bar graph to find the number of bars that fall within a given range.



Grade 2		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PS290	SMMA_ LO_01645	Graph, Chart, and Table Con- struction	Construct a Table Using Data from a Bar Graph	Create a table based on data from a bar graph.
PR298	SMMA_ LO_02158	Graph, Chart, and Table Con- struction	Construct a Line Plot	Make a line plot to show measurement data in whole number units.
NC296	SMMA_ LO_00963	Measures of Center and Spread	Identify Numbers within a Range	Add and subtract one- and two-digit numbers on a num- ber line (sums within 100). .
PR210	SMMA_ LO_01130	Graph, Chart, and Table Inter- pretation	Construct a Vertical Bar Graph Using Data from a Chart or Table	Create a vertical bar graph from a table and interpret data in the graph.
PR220	SMMA_ LO_01131	Graph, Chart, and Table Inter- pretation	Read and Interpret a Vertical Bar Graph	Interpret the shorter or taller bar of a vertical bar graph as having fewer or more items.

Grade 2		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR230	SMMA_ LO_01133	Graph, Chart, and Table Inter- pretation	Read and Interpret a Vertical Bar Graph	Identify the two-column vertical bar graph that shows one category has fewer than, the same number as, or more than the other category.
PR225	SMMA_ LO_01132	Graph, Chart, and Table Inter- pretation	Construct Charts and Tables	Create a table from a vertical bar graph.
PR205	SMMA_ LO_01134	Graph, Chart, and Table Inter- pretation	Identify the Bar Graph That Represents Data from a Chart or Table	Identify a vertical bar graph that represents data in a table.
PR200	SMMA_ LO_01124	Graph, Chart, and Table Inter- pretation	Read and Interpret Pic- tographs	Read a pictograph (3 categories, 1 to 9 items per category).

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# Geometry

Grade 2		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE235	SMMA_LO_00576	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Classify geometric figures by a shape attribute.
GE243	SMMA_LO_02211	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Identify polygons by their attributes.
GE280	SMMA_LO_02235	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Identify shapes with specific attributes (circle, triangle, square, rectangle, hexagon).
GE220	SMMA_LO_00572	Attributes of Two-Dimensional Figures	Count the Geometric Figures	Count the geometric figures in a picture.

Grade 2		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE205	SMMA_LO_00570	Attributes of Two-Dimensional Figures	Identify Figures Based on Their Attributes	Identify the object modeled by a geometric figure.
GE240	SMMA_LO_00578	Attributes of Two-Dimensional Figures	Identify Figures Based on Their Attributes	Identify a shape with positive and negative tests.
GE200	SMMA_LO_00568	Attributes of Two-Dimensional Figures	Identify Two-Dimensional Figures by Name	Match a geometric figure to its name (circle, triangle, square, or rectangle).
GE210	SMMA_LO_00571	Attributes of Two-Dimensional Figures	Identify the Figure That Is Different	Identify the figure that is not of a given type (rectangle or triangle).
GE281	SMMA_LO_00598	Lines, Line Segments, and Rays	Identify Intersecting Lines	Predict whether or not lines will intersect.
GE265	SMMA_LO_00590	Position and Location	Change the Location of an Object	Move an object to a specified location. (upper left, upper right, lower left, or lower right corner).

Grade 2		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE225	SMMA_ LO_00574	Position and Location	Describe the Relative Positions of Objects	Identify the object that is near or far from another object.
GE230	SMMA_ LO_00575	Position and Location	Describe the Relative Positions of Objects	Identify objects inside or outside a convex figure.
GE250	SMMA_ LO_00584	Position and Location	Describe the Relative Positions of Objects	Identify the object behind or in front of another object in a three-dimensional perspective.
GE295	SMMA_ LO_00600	Similarity and Congruence	Identify Congruent Two-Dimensional Figures	Identify the figure that is the same size and shape as a given figure.
GE275	SMMA_ LO_00592	Similarity and Congruence	Identify Similar Three-Dimensional Figures	Identify similar three-dimensional figures.
GE245	SMMA_ LO_00581	Similarity and Congruence	Match Congruent Two-Dimensional Figures	Match complex congruent figures in different orientations.

Grade 2		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
FR250	SMMA_ LO_00640	Similarity and Con- gruence	Divide a Figure into Congruent Parts	Draw one to two segments to divide a figure into two to four congruent parts.
GE290	SMMA_ LO_00599	Transformations	Classify the Trans- formation	Identify a figure as a slide, reflection (flip), or turn of another figure.
FR285	SMMA_ LO_02137	Geometric Com- parisons	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).

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# Measurement

Grade 2		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME257	SMMA_ LO_00757	Measurement of Two-Dimensional Figures	Calculate the Perimeter of a Simple, Closed Figure	Find the perimeter of a figure (3 to 10 non- standard units).
ME222	SMMA_ LO_00738	Money	Identify Coin Equivalencies	Find equivalence of nickels and dimes (1 to 5 dimes).
WP220	SMMA_ LO_01541	Money	Identify Coin Values	Identify items that can be purchased for a nickel.
ME227	SMMA_ LO_00740	Money	Identify Monetary Amounts (Nickels and Dimes)	Identify the given amount of money in coins (5 to 50 cents in nickels and dimes).
ME265	SMMA_ LO_00760	Money	Identify Monetary Amounts (Pen- nies, Nickels, and Dimes)	Enter the amount of money shown (10 to 99 cents).
ME280	SMMA_ LO_00143	Money	Identify Monetary Amounts (Pen- nies, Nickels, and Dimes)	Determine the number of cents in 1 to 100 pen- nies, 1 to 20 nickels, or 1 to 10 dimes.

Grade 2		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME240	SMMA_ LO_00745	Money	Represent Money in Multiple Ways	Show another way to represent an amount of money (10 to 24 cents in pennies, nickels, and dimes).
ME287	SMMA_ LO_00778	Money	Represent Money in Multiple Ways	Show the given amount of money in coins (25 to 90 cents in pennies, nickels, dimes, and quarters).
ME217	SMMA_ LO_00715	Money	Identify Monetary Amounts (Pennies and Dimes)	Enter the amount of money shown (11 to 50 cents in pennies and dimes).
ME210	SMMA_ LO_00699	Money	Identify Monetary Amounts (Pennies)	Enter the amount of money shown (1 to 5 cents in pennies).
ME212	SMMA_ LO_00704	Money	Identify Monetary Amounts (Pennies)	Enter the amount of money shown (6 to 9 cents in pennies).
ME220	SMMA_ LO_00722	Money	Identify Monetary Amounts (Pennies, Nickels, Dimes, and Quarters)	Enter the amount of money shown (10 to 19 cents in pennies, nickels, and dimes).



Grade 2		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
NC212	SMMA_ LO_00180	Money	Identify Monetary Amounts (Dollars and Dimes)	Identify the number of dollars and dimes that represent a given amount (\$1.10 to \$3.50).
ME235	SMMA_ LO_00744	Time	Use Analog and Digital Clocks to Tell Time	Set time to 5-minute intervals using digital and analog clocks.
ME236	SMMA_ LO_02220	Time	Use Analog and Digital Clocks to Tell Time	Tell time to nearest 5 minutes and know relationships of time.
ME295	SMMA_ LO_00806	Time	Match Digital Times with Descriptions	Match digital times with descriptions (e.g., quarter to or quarter past).
ME277	SMMA_ LO_00767	Units of Measure	Choose the Appropriate Metric Unit for Length, Capacity, and Weight	Select the appropriate standard unit of measurement for length, capacity, and weight (metric).
ME225	SMMA_ LO_00739	Units of Measure	Compare and Order Objects by Capacity or Volume	Add nonstandard units of capacity (sums 2 to 8).
ME230	SMMA_ LO_00742	Units of Measure	Compare and Order Objects by Capacity or Volume	Subtract nonstandard units of capacity (differences 0 to 3).

Grade 2		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME250	SMMA_ LO_00754	Units of Measure	Compare and Order Objects by Capacity or Volume	Find the capacity of a container (3 to 10 non-standard units).
ME232	SMMA_ LO_00743	Units of Measure	Compare and Order the Heights of Objects	Identify the objects that are taller or shorter than a nonstandard unit.
ME215	SMMA_ LO_00734	Units of Measure	Customary Units of Linear Measure	Identify the shape with the greater perimeter (3 to 11 nonstandard units).
ME260	SMMA_ LO_00758	Units of Measure	Measure Height, Length, or Width in Metric Units	Identify a vertical distance (2 to 9 centimeters).
ME200	SMMA_ LO_00703	Units of Measure	Measure Length in Customary Units	Measure the length of an object to the nearest inch (2 to 6 inches).
ME242	SMMA_ LO_00748	Units of Measure	Measure Length in Customary Units	Find the total length of two to four objects laid end to end (2 to 6 inches).
ME255	SMMA_ LO_00755	Units of Measure	Measure Length in Customary Units	Measure the length of an object to the nearest inch (1 to 6 inches).

Grade 2		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME245	SMMA_ LO_00750	Units of Measure	Measure Length in Metric Units	Measure the length of an object to the nearest centimeter (3 to 12 cm).
ME247	SMMA_ LO_00753	Units of Measure	Metric Units of Linear Measure	Measure two lengths and find the sum (metric, sums 2 to 9).
ME252	SMMA_ LO_00756	Units of Measure	Metric Units of Linear Measure	Measure two metric lengths, write an addition problem, and find the sum (sums 2 to 12 centimeters).
ME267	SMMA_ LO_00762	Units of Measure	Metric Units of Linear Measure	Measure the length of an object to the nearest centimeter (4 to 12 centimeters).
ME270	SMMA_ LO_00785	Units of Measure	Metric Units of Linear Measure	Measure the length of an object in centimeters or inches (whole numbers).
ME205	SMMA_ LO_00728	Units of Measure	Measure Height, Length, or Width in Customary Units	Identify an object given the estimated height and width in customary units.
ME290	SMMA_ LO_00780	Units of Measure	Choose the Appropriate Customary Units of Length	Identify the reasonable length of an object (inches, feet, and yards).

Grade 2		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME272	SMMA_ LO_02003	Units of Measure	Measure Length in Customary or Metric Units	Measure the length of an object in cm and inches; relate the two measurements to the sizes of the units.
ME218	SMMA_ LO_02188	Units of Measure	Represent Whole Numbers on a Number Line	Represent whole numbers as distances from any given location on a number line.
ME275	SMMA_ LO_02015	Measurement of Three-Dimensional Figures	Compare the Lengths of Familiar Objects	Measure two objects in inches; determine how much longer one object is than the other.

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# Number Sense and Operation

## Measurement

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC272	SMMA_ LO_00334	Number Sense	Compare Numbers Using Symbols	Compare sums (two-digit addends, multiples of 10).
NC247	SMMA_ LO_01005	Number Sense	Compare Numbers	Identify the multiple of 5 that is closest to a given number.
NC248	SMMA_ LO_01006	Number Sense	Compare Numbers	Identify the multiple of 5 that is closer to a number (25 to 94).
NC277	SMMA_ LO_01019	Number Sense	Compare Numbers to 1,001	Identify the greatest or least number (three-digit).
NC230	SMMA_ LO_00999	Number Sense	Compare Numbers to 100	Identify the greatest or least number (two-digit).
EQ220	SMMA_ LO_00326	Number Sense	Compare Sums	Compare sums (sums 1 to 9).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR200	SMMA_ LO_00400	Number Sense	Determine Equal Parts Using Fraction Models	Identify the model that is divided into equal parts (2 to 4 parts).
FR225	SMMA_ LO_00402	Number Sense	Determine Equal Parts Using Fraction Models	Count the number of equal parts in a fractional model (2 to 8 parts).
FR275	SMMA_ LO_00417	Number Sense	Determine Equal Parts Using Fraction Models	Identify the figure divided into equal parts (halves to fourths).
FR251	SMMA_ LO_00411	Number Sense	Relate Word Name to Fraction	Match the word name of a fraction to a fraction (halves, thirds, fourths).
FR275	SMMA_ LO_00416	Number Sense	Relate Word Name to Fraction	Match the word name of the fraction to the fraction (halves to eighths).
NC293	SMMA_ LO_00962	Number Sense	Sequence Numbers	Find a number that is one fewer or one greater than a given number (1 to 9), number line in feedback.
NC207	SMMA_ LO_00984	Number Sense	Sequence Numbers	Find a number that is one less or one more than a given number (two-digit), number line in feedback.

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC275	SMMA_ LO_01016	Number Sense	Sequence Numbers	Find a number that is one less than or one more than a given three-digit number.
NC280	SMMA_ LO_01020	Number Sense	Sequence Numbers	Find a number between two given numbers (1 to 999).
NC269	SMMA_ LO_01021	Number Sense	Sequence Numbers	Identify the group of numbers that shows counting by 1s (three digit).
NC290	SMMA_ LO_00961	Number Sense	Sequence Numbers Using a Number Line	Plot a point on the number line (0-20).
NC222	SMMA_ LO_00996	Number Sense	Sequence Numbers Using a Number Line	Find a missing number for a point on a number line (two-digit).
NC217	SMMA_ LO_00993	Number Sense	Sequence Numbers Using a Number Line	Identify a number on a number line between two given numbers (1 to 9).
AD203	SMMA_ LO_02210	Number Sense	Add Doubles	Write an equation to add two equal groups.

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC208	SMMA_ LO_02163	Number Sense	Add Doubles	Pair objects or count by twos to find groups that have an even number of objects.
FR260	SMMA_ LO_02174	Number Sense	Relate Fraction to Model	Describe partitioned circles as having two halves, three thirds, or four fourths equal shares.
NC209	SMMA_ LO_00183	Number Sense	Write Money Amounts Using Decimal Notation	Write the value of a set of dimes in dollar form (\$1.10 to \$3.90).
ME228	SMMA_ LO_02230	Number Sense	Represent Decimal Money Amounts Using Coins and Dollars	Find total value of a group of coins (pennies, nickels, dimes) or a group of bills (ones, fives, tens).
PS240	SMMA_ LO_01241	Operations with Numbers	Add Basic Math Facts	Act out the problem to find the sum (basic facts).
PS275	SMMA_ LO_01249	Operations with Numbers	Add Basic Math Facts	Act out a problem to find the sum of three numbers (one-digit addends).
AD220	SMMA_ LO_00040	Operations with Numbers	Add Multiples of 10	Add a multiple of 10 and a one-digit number displayed horizontally (sums 11 to 99) using place value.



Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD210	SMMA_ LO_00043	Operations with Numbers	Add Multiples of 10	Add three multiples of 10 (student choice, sums 30 to 90).
AD200	SMMA_ LO_00025	Operations with Numbers	Add Multiples of 10	Add two multiples of 10 (student choice, sums 20 to 90).
AD205	SMMA_ LO_00044	Operations with Numbers	Add Multiples of 10 Hori- zontally	Add two multiples of 10 displayed horizontally (sums 20 to 90).
AD235	SMMA_ LO_00054	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers with Regrouping	Add two addends (student choice, a one-digit and a two-digit addend, sums 20 to 98, regrouping).
AD290	SMMA_ LO_00090	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers with Regrouping	Add three addends (student choice, one- and two-digit addends, sums 30 to 98, regrouping ones).
AD225	SMMA_ LO_00033	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers without Regrouping	Add two addends (one- and two-digit addends, sums 11 to 99, no regrouping).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD230	SMMA_ LO_00049	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers without Regrouping	Add two addends displayed horizontally (one-digit and a two-digit addend, sums 11 to 99).
AD260	SMMA_ LO_00079	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers without Regrouping	Add three addends (student choice, one-digit and two-digit addends, sums 21 to 99, no regrouping).
AD285	SMMA_ LO_00067	Operations with Numbers	Add Three-Digit Whole Num- bers Vertically with Regroup- ing	Add two addends (student choice, two-digit addends, sums 30 to 98, regrouping ones).
WP245	SMMA_ LO_01556	Operations with Numbers	Add Two-Digit Whole Num- bers without Regrouping in Context	Solve an addition problem in context (two-digit addends, sums less than 100, no regrouping).
WP285	SMMA_ LO_01567	Operations with Numbers	Add Two-Digit Whole Num- bers without Regrouping in Context	Solve an addition problem in context (extra information, sums to 50, no regrouping).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP225	SMMA_ LO_01543	Operations with Numbers	Add/Subtract Money	Solve an addition problem involving money (sums 3 to 9 cents).
WP230	SMMA_ LO_01553	Operations with Numbers	Identify and Solve Addition Number Sentences	Identify and solve a number sentence for an addition problem in context (sums 2 to 9).
WP240	SMMA_ LO_01555	Operations with Numbers	Identify and Solve Addition Number Sentences	Identify and solve a number sentence for an addition problem in context (sums 2 to 9).
PS210	SMMA_ LO_01235	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Identify a picture that represents a subtraction problem (minuends 5 to 10).
WP205	SMMA_ LO_01551	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Make a picture to solve a two-step problem in context (addition and subtraction).
WP210	SMMA_ LO_01552	Operations with Numbers	Relate Subtraction Problems to Pictorial Models	Make a picture to solve a two-step problem in context (addition and subtraction).
PS200	SMMA_ LO_01231	Operations with Numbers	Skip Counting by 5s or 10s	Find the missing number in a sequence, counting by 5's or 10's.

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC260	SMMA_ LO_01003	Operations with Numbers	Skip Counting by 5s or 10s	Find a missing number in a sequence, counting by 5's or 10's (5 to 50, 10 to 100).
NC245	SMMA_ LO_01004	Operations with Numbers	Skip Counting by 5s or 10s	Find a missing number in a sequence, counting up or down by 5's (two-digit).
WP250	SMMA_ LO_01558	Operations with Numbers	Solve Addition Problems in Context	Solve a problem with extra information (addition).
PS280	SMMA_ LO_02234	Operations with Numbers	Solve Addition Problems in Context	Solve one-step real world problem (sums to 100 and related differences).
MU225	SMMA_ LO_00852	Operations with Numbers	Solve Multiplication Prob- lems Using Addition Models	Repeatedly add columns to find the total number of objects in an array (2x2 up to 5x5).
MU200	SMMA_ LO_00853	Operations with Numbers	Solve Multiplication Prob- lems Using Addition Models	Repeatedly add rows to find the total number of objects in an array (2x2 up to 5x5).
MU250	SMMA_ LO_00854	Operations with Numbers	Solve Multiplication Prob- lems Using Addition Models	Choose addition equations that represent the total objects in an array (2x2 up to 5x5).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU275	SMMA_ LO_02221	Operations with Numbers	Solve Multiplication Problems Using Addition Models	Write an equation to show that two equal addends are equal to an even number.
WP270	SMMA_ LO_01561	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem involving coins to find how much is left (two-digit numbers, no regrouping).
WP200	SMMA_ LO_01538	Operations with Numbers	Solve Subtraction Problems in Context	Act out the solution to multi-step problem in context (addends, minuends 1 to 4).
WP260	SMMA_ LO_01559	Operations with Numbers	Solve Subtraction Problems in Context	Identify the expression that represents a subtraction problem in context (minuends 2 to 5).
WP290	SMMA_ LO_01568	Operations with Numbers	Solve Subtraction Problems in Context	Identify and solve a number sentence for a subtraction problem in context (minuends 2 to 5).
WP265	SMMA_ LO_01560	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem in context (two-digit minuends, one-digit subtrahends, no regrouping).
WP280	SMMA_ LO_01563	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem to find a person's age (minuends 1 to 99, subtrahends 1 to 9, no regrouping).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU230	SMMA_ LO_01452	Operations with Numbers	Subtract Multiples of 10	Subtract a multiple of 10 from a 2-digit number (minuends 11-99, vertical presentation).
SU205	SMMA_ LO_01437	Operations with Numbers	Subtract Multiples of 10	Subtract multiples of 10 (student choice, minuends 20 to 90, subtrahends 10 to 80).
SU210	SMMA_ LO_01438	Operations with Numbers	Subtract Multiples of 10	Subtract multiples of 10 (minuends 20 to 90, subtrahends 10 to 80, horizontal presentation).
NC232	SMMA_ LO_01000	Operations with Numbers	Subtract Two-Digit Whole Numbers	Find the difference between two numbers (two-digit, presented as a sentence).
SU245	SMMA_ LO_01463	Operations with Numbers	Subtract Two-Digit Whole Numbers with Regrouping	Subtract two-digit numbers with regrouping (vertical presentation).
SU280	SMMA_ LO_01473	Operations with Numbers	Subtract Two-Digit Whole Numbers with Regrouping	Add two addends (student choice, three-digit addends, sums 1000 to 1989, regrouping).
SU290	SMMA_ LO_01488	Operations with Numbers	Subtract Two-Digit Whole Numbers with Regrouping	Subtract with regrouping (minuends 25-98).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU235	SMMA_ LO_01454	Operations with Numbers	Subtract Two-Digit Whole Numbers without Regrouping	Subtract (student choice, minuends 21 to 99, no regrouping).
SU240	SMMA_ LO_01462	Operations with Numbers	Subtract Whole Numbers Using Counting Up Strategy	Subtract two numbers displayed horizontally (counting up strategy, minuends 21 to 98, subtrahends 2 to 9, regrouping).
SU250	SMMA_ LO_01472	Operations with Numbers	Subtract Whole Numbers Using Counting Up Strategy	Subtract two numbers displayed horizontally (counting up strategy, minuends 25 to 98, subtrahends 6 to 9, regrouping).
SU225	SMMA_ LO_01428	Operations with Numbers	Subtract Whole Numbers without Regrouping	Subtract (student choice, minuends 21 to 95, subtrahends 1 to 9, no regrouping).
SU220	SMMA_ LO_01450	Operations with Numbers	Subtract Whole Numbers without Regrouping	Subtract (minuends 21 to 99, subtrahends 1 to 9, no regrouping).
NC284	SMMA_ LO_02012	Operations with Numbers	Use Problem Solving Strategies for Addition/Subtraction Problems	Explain how to solve an addition problem, either by using place value blocks or by rewriting the problem.

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC287	SMMA_ LO_02013	Operations with Numbers	Use Problem Solving Strategies for Addition/Subtraction Problems	Explain how to solve a subtraction problem, either by using place value blocks or by rewriting the problem as an addition problem.
PS225	SMMA_ LO_01240	Operations with Numbers	Use Problem Solving Strategies for Addition/Subtraction Problems	Use guess and check to solve an addition and subtraction problem (basic facts).
NC239	SMMA_ LO_00989	Operations with Numbers	Relate Addition/Subtraction Problems to Pictorial Models (Base Ten)	Find the sum or difference when a two-digit number is added to or subtracted from a number (base-ten block models).
NC281	SMMA_ LO_02186	Operations with Numbers	Relate Addition/Subtraction Problems to Pictorial Models (Base Ten)	Use place value to determine the number that is 10 or 100 more or less than a given number.
AD240	SMMA_ LO_00055	Operations with Numbers	Add One/Two-Digit Whole Numbers Horizontally with Regrouping	Find the sum of two numbers displayed horizontally (a one-digit and a two-digit addend, sums 20 to 98, regrouping), given horizontally.



Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD245	SMMA_ LO_00069	Operations with Numbers	Add One-Digit Whole Num- bers	Add three addends (student choice, one-digit addends, sums 20 to 27).
AD250	SMMA_ LO_00062	Operations with Numbers	Add One-Digit Whole Num- bers Horizontally	Add three addends displayed horizontally (one-digit addends, sums 20 to 27).
AD275	SMMA_ LO_00064	Operations with Numbers	Add Two-Digit Whole Num- bers Horizontally	Add two addends displayed horizontally (two-digit addends, sums 21 to 99).
NC203	SMMA_ LO_00966	Operations with Numbers	Skip Counting	Determine if a given number (up to 20) is even or odd.
NC266	SMMA_ LO_01030	Operations with Numbers	Skip Counting	Count by 5's, 10's, or 100's.
SU200	SMMA_ LO_02014	Operations with Numbers	Find the Missing Number in a Subtraction Number Sen- tence	Identify the missing number (minuend, subtrahend, or dif- ference) in a subtraction equation, for numbers 20 and less.
NC218	SMMA_ LO_01007	Place Value	Determine Equivalent Num- ber Values to 1,001	Find a number equal to 1 to 9 hundreds.

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC221	SMMA_ LO_01008	Place Value	Determine Equivalent Number Values to 1,001	Find the number of hundreds equivalent to a multiple of 100 (100 to 900).
NC227	SMMA_ LO_01015	Place Value	Determine Equivalent Number Values to 1,001	Find a number equal to 1 to 9 hundreds, 0 to 9 tens, and 0 to 9 ones.
NC225	SMMA_ LO_01014	Place Value	Determine Place Value of Digits	Identify a number with a given digit in the ones, tens, or hundreds place.
NC278	SMMA_ LO_01017	Place Value	Identify Place Value to 1,000,001	Find the sum or difference when ones, tens, or hundreds are added to or subtracted from a three-digit number (base-ten block models).
NC254	SMMA_ LO_01033	Place Value	Identify Place Value to 1,000,001	Identify a number with a given digit in the ones, tens, or hundreds place.
NC242	SMMA_ LO_01047	Place Value	Identify Place Value to 1,000,001	Find a number equal to 1 to 9 hundreds, 0 to 9 tens, and 0 to 9 ones.

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC251	SMMA_ LO_01010	Place Value	Recognize Number Values to 1,000 Using Concrete Objects	Identify the number represented by a set of objects (pictorial models of hundreds, tens, and ones; three-digit).
NC250	SMMA_ LO_01009	Place Value	Relate Words, Models or Numbers to 1,001	Identify the word name for a three-digit number.
NC257	SMMA_ LO_01018	Place Value	Relate Words, Models or Numbers to 1,001	Identify the number, model, word name, or expanded notation that has a different value (three-digit).
NC245	SMMA_ LO_01042	Place Value	Relate Words, Models or Numbers to 1,001	Enter the number for a word name (100 to 999).
NC236	SMMA_ LO_01012	Place Value	Represent Numbers to 1,000 Using Base-Ten Blocks	Use base-ten blocks to show a number (three-digit).
NC233	SMMA_ LO_01013	Place Value	Represent Numbers to 1,000 Using Base-Ten Blocks	Enter a three-digit number in a place-value chart (base-ten block models, three-digit).
NC230	SMMA_ LO_01025	Place Value	Represent Numbers to 1,000 Using Base-Ten Blocks	Enter a three-digit number in a place-value chart (base-ten block models, three-digit).

Grade 2		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC270	SMMA_ LO_02233	Place Value	Represent Numbers to 1,000 Using Base-Ten Blocks	Compose 3-digit numbers using hundreds, tens, and ones.
NC215	SMMA_ LO_02011	Place Value	Relate Addition/Subtraction Problems to Pictorial Models (Base Ten)	Given a number (1-9) of groups of 10 objects, determine how many more groups of 10 objects are needed to make a hundred.
NC290	SMMA_ LO_01050	Number Theory	Identify Odd/Even Numbers	Identify an even or odd number (2 to 99).
NC292	SMMA_ LO_01053	Number Theory	Identify Odd/Even Numbers	Identify the expression whose sum is odd or even (basic facts).
NC295	SMMA_ LO_01054	Number Theory	Identify Odd/Even Numbers	Identify odd or even numbers (two- and three-digit).

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## Patterns, Algebra, and Functions

Grade 2		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ210	SMMA_ LO_00324	One-Step Equations	Find the Difference to Identify the Variable	Solve for c in $a - b = c$ (differences 1 to 9).
EQ240	SMMA_ LO_00329	One-Step Equations	Find the Difference to Identify the Variable	Solve for c in $a - b = c$ (differences 1 to 9).
EQ250	SMMA_ LO_00330	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a + b = c$ (sums 0 to 9).
EQ260	SMMA_ LO_00331	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a - b = c$ (differences 0 to 9).
EQ275	SMMA_ LO_00332	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a + b = c$ (sums 10 to 18).
EQ280	SMMA_ LO_00333	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a - b = c$ (differences 0 to 18).

Grade 2		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
WP295	SMMA_ LO_01574	Open Sen- tences	Find the Missing Addend	Solve a problem in context by finding a missing addend (three addends, sums to 20).
AD270	SMMA_ LO_00050	Open Sen- tences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (a multiple of 10 and a one-digit addend, sums 11 to 99, no regrouping).
AD265	SMMA_ LO_00082	Open Sen- tences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (three addends, sums 20 to 27, regrouping).
EQ290	SMMA_ LO_01656	Open Sen- tences	Find the Missing Addend in a Number Sentence	Solve for the unknown in an addition equation (addends and sums less than 16).
AD280	SMMA_ LO_00070	Open Sen- tences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (a one-digit and a two-digit addend, sums 10 to 99, no regrouping).
AD295	SMMA_ LO_00084	Open Sen- tences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (two addends, sums 20 to 98, regrouping).

Grade 2		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AD283	SMMA_ LO_02162	Open Sen- tences	Find the Missing Addend in a Number Sentence	Identify the missing variable of addition or subtraction equations (sums 51 to 100, minuends 51 to 100).
SU295	SMMA_ LO_01478	Open Sen- tences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a number sentence (minuends 21 to 99).
SU275	SMMA_ LO_01486	Open Sen- tences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a subtraction number sentence (minuends 10 to 99, no regrouping).
SU270	SMMA_ LO_01491	Open Sen- tences	Find the Missing Minuend in a Number Sentence	Find the missing minuend in a subtraction number sentence (minuends 20-98, subtrahends 11-89).
SU260	SMMA_ LO_01470	Open Sen- tences	Find the Missing Subtrahend in a Number Sentence	Find the missing subtrahend in a subtraction number sentence (minuends 21 to 99).
SU265	SMMA_ LO_01480	Open Sen- tences	Find the Missing Subtrahend in a Number Sentence	Find the missing subtrahend in a number sentence (minuends 10 to 99).
EQ200	SMMA_ LO_00323	Open Sen- tences	Find the Sum to Identify the Variable	Solve for c in $a + b = c$ (sums 0 to 9).

Grade 2		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ225	SMMA_ LO_00327	Open Sen- tences	Find the Sum to Identify the Variable	Solve for c in $a + b = c$ (sums 10 to 18).
WP275	SMMA_ LO_01562	Open Sen- tences	Identify the Number Sentence That Is a Translation of the Writ- ten Phrase	Identify and solve the number sentence for a sub- traction problem in context (minuends 2 to 5).
PS255	SMMA_ LO_01242	Open Sen- tences	Identify the Number Sentence That Is a Translation of the Writ- ten Phrase	Identify a number sentence that can be used to solve a word problem with extra information (addition or sub- traction, basic facts).
PS285	SMMA_ LO_01060	Open Sen- tences	Find the Missing Number in a Number Sentence	Identify a missing number in related addition and sub- traction number sentences (two-digit sums, two-digit dif- ferences).
GE260	SMMA_ LO_00585	Patterns	Extend a Pattern of Geometric Figures	Extend a 1-2-3 pattern of geometric figures.
NC200	SMMA_ LO_01002	Patterns	Find a Missing Number in a Sequence	Find the missing two-digit number in a sequence of odd or even numbers.



Grade 2		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
GE270	SMMA_ LO_00591	Patterns	Identify the Missing Geometric Figure in a Pattern	Identify the missing geometric figure in a 1-2-1-2 pattern.
PS282	SMMA_ LO_01250	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify a number sentence that can be used to solve a problem with extra information (addition or subtraction, basic facts).
PS250	SMMA_ LO_01247	Written Expressions	Identify the Expression That Is a Translation of the Written Phrase	Choose a way to solve the addition or subtraction word problem.

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## Speed Games (Fluency)

Grade 2		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG200	SMMA_SG_00200	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 10.
SG210	SMMA_SG_00210	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 10.
SG220	SMMA_SG_00220	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 10.
SG250	SMMA_SG_00250	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 10.
SG270	SMMA_SG_00270	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 15.
SG230	SMMA_SG_00230	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 10.

Grade 2		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG240	SMMA_SG_00240	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 10.
SG290	SMMA_SG_00290	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 10.

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## Probability and Discrete Mathematics

Grade 2		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR260	SMMA_LO_01141	Probability	Describe the Probability of Events as Certain or Impossible	Within the context of repeated selections without replacement from a bag containing two balls of the same color, label events as certain or impossible.

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# Data Analysis

Grade 3		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
AP320	SMMA_ LO_01642	Data Collection	Formulate Questions around Numerical Data	Formulate questions around numerical data.
AP350	SMMA_ LO_00146	Graph, Chart, and Table Construction	Construct a Pictograph from a Data Set	Make a pictograph from a set of data.
AP327	SMMA_ LO_01302	Graph, Chart, and Table Construction	Read and Interpret Bar Graphs	Read and interpret data about tree growth from a bar graph.
AP365	SMMA_ LO_01303	Graph, Chart, and Table Construction	Read and Interpret Bar Graphs	Given a bar graph of tree growth, calculate the height a tree grew from one year to another.
AP377	SMMA_ LO_01304	Graph, Chart, and Table Construction	Read and Interpret Bar Graphs	Read a bar graph and answer questions about tree growth over time.
PR350	SMMA_ LO_01160	Graph, Chart, and Table Construction	Read and Interpret Circle Graphs	Select a circle graph whose sectors are in the same proportions as the data displayed in a given table.

Grade 3		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR325	SMMA_ LO_01158	Graph, Chart, and Table Construction	Read and Interpret Pic- tographs	Read and interpret a pictograph with a scale of 2, 5 or 10.
AP302	SMMA_ LO_01299	Graph, Chart, and Table Construction	Read and Interpret Pic- tographs	Read and interpret a pictograph about birds counted (2 to 5 birds in each row).
AP315	SMMA_ LO_01301	Graph, Chart, and Table Construction	Read and Interpret Tables and Charts	Read weights from a chart; choose two weights that equal a given total (sums to 1,500).
AP395	SMMA_ LO_01305	Graph, Chart, and Table Construction	Read and Interpret Tables and Charts	Given a chart of tree growth, infer which of two years there was more rainfall.
AP355	SMMA_ LO_01646	Graph, Chart, and Table Construction	Read and Interpret Tables and Charts	Read and interpret a table about temperature.
AP300	SMMA_ LO_00140	Graph, Chart, and Table Construction	Read and Interpret a Horizontal Pictograph	Read and interpret a horizontal pictograph with a scale of 2 (five items).

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# Geometry

Grade 3		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE350	SMMA_LO_01677	Geometric Comparisons	Sort Two-Dimensional and Three-Dimensional Figures	Sort two-dimensional and three-dimensional shapes.
GE300	SMMA_LO_00606	Similarity and Congruence	Identify Congruent Two-Dimensional Figures	Identify congruent figures on a geoboard.
GE375	SMMA_LO_00610	Similarity and Congruence	Identify Similar Two-Dimensional Figures	Identify similar polygons.
GE391	SMMA_LO_02237	Similarity and Congruence	Divide a Figure into Congruent Parts	Identify rectangles that have divided into 2, 3, or 4 equal parts.

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# Measurement

Grade 3		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME325	SMMA_ LO_00773	Measurement of Two-Dimensional Figures	Calculate Area Using Metric Units	Find the area of a rectangle (5 to 25 square centimeters).
ME315	SMMA_ LO_02028	Measurement of Two-Dimensional Figures	Calculate the Area of an Irregular Figure	Find the area of a plane figure made up of square units and halves of square units.
ME375	SMMA_ LO_02032	Measurement of Two-Dimensional Figures	Calculate the Area of an Irregular Figure	Find the area of a rectilinear figure in a context by decomposing it into two rectangles.
ME377	SMMA_ LO_00783	Measurement of Two-Dimensional Figures	Calculate the Area of an Irregular Figure	Count squares and half squares to find the area of a figure in square centimeters.
ME333	SMMA_ LO_02244	Measurement of Two-Dimensional Figures	Calculate the Area of an Irregular Figure	Find the perimeter or area of a figure composed of non-overlapping rectangles.

Grade 3		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME395	SMMA_ LO_00818	Measurement of Two-Dimensional Figures	Identify the Perimeter in Metric Units	Identify the expression for the perimeter of a figure.
ME300	SMMA_ LO_00706	Measurement of Two-Dimensional Figures	Calculate Area Using Non-standard Units	Count squares to find the area (2 to 8 units).
ME320	SMMA_ LO_00752	Measurement of Two-Dimensional Figures	Calculate Area Using Non-standard Units	Find the sum of the areas of two figures (sums 3 to 8, nonstandard units).
ME390	SMMA_ LO_00788	Measurement of Two-Dimensional Figures	Calculate the Perimeter of a Simple, Closed Figure	Given the length of one side of a rectangle, measure another side, and then find the perimeter.
ME396	SMMA_ LO_02236	Measurement of Two-Dimensional Figures	Calculate the Perimeter of a Simple, Closed Figure	Count unit segments to find perimeters of rectangles.



Grade 3		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME350	SMMA_ LO_00776	Measurement of Two-Dimensional Figures	Identify the Figure with the Least or Greatest Area	Identify the figure in a set with the least or greatest area (figures are made up of squares).
AP380	SMMA_ LO_00173	Measurement of Two-Dimensional Figures	Calculate Area Using Customary or Metric Units	Find the area of a rectangle (36 to 144 customary or metric square units).
ME357	SMMA_ LO_02029	Measurement of Two-Dimensional Figures	Find the Area of a 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.
ME360	SMMA_ LO_02030	Measurement of Two-Dimensional Figures	Find the Area of a Rectangle	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.
ME312	SMMA_ LO_02027	Measurement of Two-Dimensional Figures	Choose the Appropriate Measuring Instruments	Identify a unit square and what attribute it is used to measure.

Grade 3		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME366	SMMA_ LO_02031	Measurement of Two-Dimen- sional Figures	Use an Area Model to Rep- resent the Distributive Property	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).
WP325	SMMA_ LO_01547	Time	Determine Elapsed Time on an Analog Clock	Solve a problem by identifying the time 1 to 2 hours after a given time (not crossing 12 o'clock).
ME335	SMMA_ LO_00770	Time	Determine Elapsed Time on an Analog Clock	Find the elapsed time (1 1/2 to 6 1/2 hours, start times and end times on the hour or half-hour, can cross 12 o'clock).
ME330	SMMA_ LO_00731	Time	Determine Elapsed Time on an Analog Clock	Determine elapsed time (1 to 6 hours, start and end times on the hour, can cross 12 o'clock).
AP360	SMMA_ LO_00153	Time	Determine Elapsed Time on an Analog Clock	Find the time one to five hours before or after a given time (not crossing 12 o'clock).
ME340	SMMA_ LO_00775	Time	Determine Elapsed Time on an Analog Clock	Show time on an analog clock 5 to 55 minutes before or after the time shown to the hour or half hour on an analog clock.

Grade 3		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
AP305	SMMA_ LO_00142	Time	Determine Elapsed Time on an Analog Clock	Find the elapsed time (differences from 1 to 6 hours, does not cross 12 o'clock).
AP370	SMMA_ LO_00155	Time	Determine Elapsed Time on an Analog Clock	Compare the difference of two times to a given time (1 to 24 hours, across 12 o'clock).
AP375	SMMA_ LO_00162	Time	Determine Elapsed Time on an Analog Clock	Find the time one to five hours before or after a given time (across 12 o'clock).
AP390	SMMA_ LO_00175	Time	Determine Elapsed Time on an Analog Clock	Find the future time from a starting time.
ME355	SMMA_ LO_00779	Time	Identify Alternative Ways of Stating Time	Identify another way to state the time (minutes before or after the hour).
AP310	SMMA_ LO_01670	Time	Use Analog and Digital Clocks to Tell Time	Set the digital clock to match the time on the analog clock to the exact minute.
ME322	SMMA_ LO_00771	Time	Use Analog and Digital Clocks to Tell Time	Show time to the minute using digital and analog clocks.

Grade 3		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME365	SMMA_ LO_02155	Time	Determine the time before or after a given time (intervals in minutes; analog and digital clocks)	Show time 1 to 11 hours and 5 to 55 minutes before or after the time shown (analog and digital clocks).
ME370	SMMA_ LO_00781	Units of Measure	Compare the Weight/Mass of Familiar Objects	Identify which familiar object is heavier.
AP325	SMMA_ LO_01674	Units of Measure	Customary Units of Capacity and Volume	Choose the appropriate customary units of liquid measure (cups, quarts, and gallons).
ME385	SMMA_ LO_00787	Units of Measure	Identify the Reasonable Weight for an Object in Customary Units	Identify the reasonable weight of an object (ounces, pounds, and tons).
ME305	SMMA_ LO_00764	Units of Measure	Compare and Order Objects by Capacity or Volume	Add units of capacity (pints, sums 2 to 6).

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# Number Sense and Operations

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP365	SMMA_ LO_01586	Estimation	Determine Reasonableness	Identify the most reasonable quantity for a context (order of magnitude differs).
PS350	SMMA_ LO_01259	Estimation	Determine Reasonableness	Determine the reasonableness of a sum or difference (two- and three-digit numbers).
WP335	SMMA_ LO_01615	Estimation	Estimate Sums to Nearest Ten	Estimate the sum by rounding to the nearest 10 (two-digit addends).
AD392	SMMA_ LO_01052	Estimation	Estimate Sums/Differences	Identify the best estimate for a sum of three numbers (three-digit addends, round to the nearest 100).
WP350	SMMA_ LO_01580	Estimation	Estimate Sums/Differences Involving Money	Estimate the sum or difference in a money problem by rounding to the nearest 10 (two-digit sums and differences).
EQ325	SMMA_ LO_00337	Number Sense	Compare Differences Using Symbols	Compare differences (minuends 1 to 9).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC310	SMMA_ LO_01026	Number Sense	Compare Numbers to 1,001	Identify the greatest or least number (three-digit).
GE390	SMMA_ LO_02000	Number Sense	Determine Equal Parts Using Fraction Models	Partition shapes into equal parts.
FR358	SMMA_ LO_00427	Number Sense	Determine Equal Parts Using Fraction Models	Find a fraction equal to 1 (halves to eighths).
FR363	SMMA_ LO_02148	Number Sense	Determine Equal Parts Using Fraction Models	Represent a unit fraction $1/b$ by partitioning a number line and then finding $1/b$ on it.
FR375	SMMA_ LO_02190	Number Sense	Determine Equal Parts Using Fraction Models	Represent fractions of halves, fourths, and eighths as distances from zero on a number line.
FR300	SMMA_ LO_00403	Number Sense	Determine Fractional Amounts Using Region- s/Areas	Count the fractional parts and total number of parts in a region (halves, thirds, fourths).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR325	SMMA_ LO_00409	Number Sense	Determine Fractional Amounts Using Region- s/Areas	Identify the figure showing a fractional part shaded (halves, thirds, fourths).
FR331	SMMA_ LO_00410	Number Sense	Determine Fractional Amounts Using Region- s/Areas	Identify the fraction representing a shaded region (halves, thirds, fourths).
FR304	SMMA_ LO_00419	Number Sense	Determine Fractional Amounts Using Region- s/Areas	Count shaded parts and the total number of parts (halves to eighths).
FR336	SMMA_ LO_00420	Number Sense	Determine Fractional Amounts Using Region- s/Areas	Identify the figure showing a fraction of a region shaded (halves to eighths).
FR350	SMMA_ LO_00422	Number Sense	Determine Fractional Amounts Using Region- s/Areas	Enter the fraction representing the shaded amount (halves to eighths).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR312	SMMA_ LO_00412	Number Sense	Determine Fractional Amounts Using Sets	Count the fractional parts and total number of parts in a set (halves, thirds, fourths).
FR325	SMMA_ LO_00413	Number Sense	Determine Fractional Amounts Using Sets	Identify the figure showing the fraction of a set shaded (halves, thirds, fourths).
FR330	SMMA_ LO_00414	Number Sense	Determine Fractional Amounts Using Sets	Identify the fraction representing shaded items in a set (halves, thirds, fourths).
FR332	SMMA_ LO_00415	Number Sense	Determine Fractional Amounts Using Sets	Identify a fractional portion of a set (halves, thirds, fourths).
FR340	SMMA_ LO_00421	Number Sense	Determine Fractional Amounts Using Sets	Identify a fraction representing the shaded part (halves to eighths).
FR370	SMMA_ LO_00423	Number Sense	Determine Fractional Amounts Using Sets	Count the shaded and total number of elements in a set (halves to eighths).
FR375	SMMA_ LO_00424	Number Sense	Determine Fractional Amounts Using Sets	Solve a problem by finding the fractional amount of a set (halves to eighths).



Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR377	SMMA_ LO_00425	Number Sense	Determine Fractional Amounts Using Sets	Identify a fractional portion of a set (halves to eighths).
FR395	SMMA_ LO_00428	Number Sense	Determine Fractional Amounts Using Sets	Using pictures, find a fractional amount of a whole number (product of halves to fourths and 2 to 16).
PR375	SMMA_ LO_01162	Number Sense	Ratios and Proportions	Select a table that contains data that are in the same proportions as the sectors of a graph.
ME332	SMMA_ LO_00774	Number Sense	Represent Decimal Money Amounts Using Coins and Dollars	Show a decimal money amount in dollars and coins (\$1.00 to \$5.00).
NC325	SMMA_ LO_01029	Number Sense	Sequence Numbers	Identify four numbers that are in consecutive order (three-digit).
NC320	SMMA_ LO_01027	Number Sense	Sequence Numbers	Identify a number that is between two numbers, or before, after, or closer to a number (101 to 999).
NC300	SMMA_ LO_01023	Number Sense	Sequence Numbers Using a Number Line	Identify whole numbers on a number line that satisfy the inequality (0 to 10).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC365	SMMA_ LO_01037	Number Sense	Sequence Numbers Using a Number Line	Enter a number on a partially numbered number line (100 to 999).
ME380	SMMA_ LO_00784	Number Sense	Write Money Amounts Using Decimal Notation	Write the value of a set of coins as a decimal amount (\$1.00 to \$3.20).
FR318	SMMA_ LO_00404	Number Sense	Relate Fraction to Model	Identify a model that represents a fraction (halves, thirds, fourths).
FR322	SMMA_ LO_00405	Number Sense	Relate Fraction to Model	Identify a fraction that represents a model (halves, thirds, fourths).
FR310	SMMA_ LO_00406	Number Sense	Relate Fraction to Model	Identify the set of shapes that represents a fraction (halves, thirds, fourths).
FR380	SMMA_ LO_02035	Number Sense	Determine Equivalent Fractions	Model equivalent fractions; identify equivalent fractions on a number line.
FR354	SMMA_ LO_02184	Number Sense	Determine Fractional Amounts Using Fraction Models	Use concrete models to count fractional parts beyond one whole.

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR392	SMMA_ LO_02242	Number Sense	Determine Fractional Amounts Using Fraction Models	Use unit fraction circles to represent a given fraction.
FR367	SMMA_ LO_00430	Number Sense	Identify/Compare Fractions Using a Number Line	Enter the missing fraction on a number line (halves to eighths).
FR370	SMMA_ LO_00431	Number Sense	Identify/Compare Fractions Using a Number Line	Identify a fraction for a given point on a number line divided into tenths, twelfths, or sixteenths.
FR385	SMMA_ LO_00433	Number Sense	Determine Equivalent Frac- tions Using Models	Using models, find equivalent fractions (halves, thirds, fourths, sixths, and eighths).
FR390	SMMA_ LO_00447	Number Sense	Compare Fractions with Like Denominators	Compare fractions (halves, thirds, fourths, sixths, and eighths).
FR383	SMMA_ LO_01708	Number Sense	Determine Equivalent Frac- tions for One-Half	Identify equivalent fractions (halves, thirds, fourths, sixths, and eighths).
FR393	SMMA_ LO_02243	Number Sense	Relate Word Name to Frac- tion	Represent fractions in word or numeral-word form.

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC399	SMMA_LO_01090	Number Theory	Use Commutative/Associative Properties of Addition	Use the commutative and associative properties of addition to find the missing number.
NC397	SMMA_LO_02241	Number Theory	Multiples	Determine multiples within 144 of a given one digit number.
WP330	SMMA_LO_01576	Operations with Numbers	Add Basic Math Facts in Context	Solve an addition problem in context (three addends, sums 9 to 18).
WP370	SMMA_LO_01587	Operations with Numbers	Add Basic Math Facts in Context	Solve an addition problem in context (four addends, sums 0 to 25).
AD380	SMMA_LO_00071	Operations with Numbers	Add Three-Digit Whole Numbers without Regrouping	Add two addends (student choice, three-digit addends, sums 200 to 999, no regrouping).
AD370	SMMA_LO_00081	Operations with Numbers	Add Three-Digit Whole Numbers without Regrouping	Add two addends (student choice, three-digit addends, sums 300 to 989, regrouping tens).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD325	SMMA_ LO_00075	Operations with Numbers	Add Two-Digit Whole Num- bers Vertically with Regroup- ing	Add two addends (student choice, two-digit addends, sums 100 to 198, regrouping ones and tens).
AD375	SMMA_ LO_00065	Operations with Numbers	Add Two-Digit/Three-Digit Whole Numbers without Regrouping	Add two addends (student choice, a two-digit and a three- digit addend, sums 100 to 999, no regrouping).
ME310	SMMA_ LO_00765	Operations with Numbers	Add/Subtract Money	Identify the set of coins that has greater value (16 to 75 cents in pennies, nickels, dimes, and quarters).
DC350	SMMA_ LO_00181	Operations with Numbers	Add/Subtract Money	Solve an addition problem by finding the total cost of two items (prices expressed as decimals, total < \$0.50, no regrouping).
NC342	SMMA_ LO_01031	Operations with Numbers	Determine Missing Oper- ations in Number Sentences	Identify the missing operation in a subtraction or addition number sentence (basic facts).
NC390	SMMA_ LO_01055	Operations with Numbers	Determine Missing Oper- ations in Number Sentences	Identify the missing operation (sums 20 to 99, differences 10 to 70).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
PS395	SMMA_ LO_01074	Operations with Numbers	Determine Missing Oper- ations in Number Sentences	Identify the missing operation in a number sentence (all operations).
DV325	SMMA_ LO_00280	Operations with Numbers	Divide Basic Math Facts	Divide using basic facts (combinations to 5 x 5).
DV350	SMMA_ LO_00282	Operations with Numbers	Divide Basic Math Facts	Divide using basic facts (combinations 2 x 6 to 9 x 5).
DV375	SMMA_ LO_00284	Operations with Numbers	Divide Basic Math Facts	Divide (combinations 6 x 6 to 9 x 9, no remainder).
WP380	SMMA_ LO_01590	Operations with Numbers	Identify Multiplication Num- ber Sentences in Context	Identify and solve an expression that represents a mul- tiplication problem in context (products 3 x 4 to 9 x 9).
NC325	SMMA_ LO_00344	Operations with Numbers	Multiply Basic Math Facts	Complete fact families with four facts (products 2 x 3 to 8 x 9).
MU305	SMMA_ LO_00855	Operations with Numbers	Multiply Basic Math Facts	Multiply two one-digit numbers (vertical products 1 x 1 to 5 x 5).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU350	SMMA_ LO_00857	Operations with Numbers	Multiply Basic Math Facts	Multiply whole numbers (vertical products [1-5]x[6-9]).
MU310	SMMA_ LO_00861	Operations with Numbers	Multiply Basic Math Facts	Multiply whole numbers (horizontal products 1 x 1 to 5 x 5).
MU325	SMMA_ LO_00863	Operations with Numbers	Multiply Basic Math Facts	Multiply whole numbers (vertical products 1 x 6 to 5 x 9).
MU355	SMMA_ LO_00865	Operations with Numbers	Multiply Basic Math Facts	Multiply whole numbers (horizontal products 6 x 1 to 9 x 5).
MU380	SMMA_ LO_00867	Operations with Numbers	Multiply Basic Math Facts	Multiply whole numbers displayed horizontally (products 6 x 6 to 9 x 9).
MU398	SMMA_ LO_02212	Operations with Numbers	Multiply Basic Math Facts	Multiply two one-digit numbers.
MU330	SMMA_ LO_00859	Operations with Numbers	Multiply Basic Math Facts Horizontally	Multiply two one-digit numbers (displayed horizontally (products 1 x 6 to 5 x 9).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU375	SMMA_ LO_00868	Operations with Numbers	Multiply Basic Math Facts Horizontally	Multiply whole numbers displayed (vertical products 6 x 6 to 9 x 9).
WP340	SMMA_ LO_01578	Operations with Numbers	Multiply Using Repeated Addition	Solve a multiplication problem in context (repeated addition feedback, products 2 x 2 to 5 x 5).
MU300	SMMA_ LO_01034	Operations with Numbers	Skip Counting	Find the missing numbers on a number line, counting by 3s, 4s, 5, etc., to 9s.
WP390	SMMA_ LO_01593	Operations with Numbers	Solve Multiplication/Division Problems in Context	Solve a problem using data in a table (twice, half, three times, or four times an amount).
WP375	SMMA_ LO_01589	Operations with Numbers	Solve Multiplication/Division Problems with Missing/Extra Information	Solve a multiplication problem in context with extra information.
WP345	SMMA_ LO_01579	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem involving coins (two-digit numbers, no regrouping).
WP355	SMMA_ LO_01581	Operations with Numbers	Solve Subtraction Problems in Context	Solve a subtraction problem in context (extra information, minuends 2 to 99, no regrouping).



Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP395	SMMA_ LO_01610	Operations with Numbers	Solve Subtraction Problems in Context	Solve a problem in context that involves finding the difference of 2 three-digit numbers.
SU375	SMMA_ LO_01459	Operations with Numbers	Subtract Three-Digit Whole Numbers with Regrouping	Subtract 100 from a three-digit number presented in a sentence.
SU380	SMMA_ LO_01483	Operations with Numbers	Subtract Three-Digit Whole Numbers with Regrouping	Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place).
SU385	SMMA_ LO_01485	Operations with Numbers	Subtract Three-Digit Whole Numbers with Regrouping	Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place).
SU390	SMMA_ LO_01487	Operations with Numbers	Subtract Three-Digit Whole Numbers with Regrouping	Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place).
SU395	SMMA_ LO_01490	Operations with Numbers	Subtract Three-Digit Whole Numbers with Regrouping	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).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU355	SMMA_ LO_01467	Operations with Numbers	Subtract Three-Digit Whole Numbers without Regroup- ing	Find the difference of two three-digit numbers.
SU365	SMMA_ LO_01469	Operations with Numbers	Subtract Three-Digit Whole Numbers without Regroup- ing	Find the difference of two three-digit numbers (no regroup- ing).
SU370	SMMA_ LO_01477	Operations with Numbers	Subtract Three-Digit Whole Numbers without Regroup- ing	Find the difference of two three-digit numbers (student choice, no regrouping).
SU315	SMMA_ LO_01471	Operations with Numbers	Subtract Whole Numbers with Regrouping	Find the difference of two whole numbers (student choice, three-digit minuends, two-digit subtrahends, regrouping from hundreds place to tens place).
SU320	SMMA_ LO_01475	Operations with Numbers	Subtract Whole Numbers with Regrouping	Find the difference of two whole numbers (student choice, three-digit minuends, two-digit subtrahends, regrouping from tens place to ones place).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU325	SMMA_ LO_01479	Operations with Numbers	Subtract Whole Numbers with Regrouping	Find the difference of two whole numbers (student choice, minuends 201 to 999, subtrahends 11 to 99, regrouping).
SU335	SMMA_ LO_01489	Operations with Numbers	Subtract Whole Numbers with Regrouping	Find the difference of two whole numbers (student choice, regrouping from tens place to ones place and hundreds place to tens place).
SU330	SMMA_ LO_01481	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hundreds Place	Find the difference of two whole numbers (student choice, three-digit minuends, two-digit subtrahends, regrouping from hundreds place to tens place).
SU340	SMMA_ LO_01492	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hundreds Place	Subtract a two-digit number from a three-digit number (regrouping from the tens place and hundreds place).
DV300	SMMA_ LO_01664	Operations with Numbers	Use Conceptual Models to Understand Division	Dividing 1-digit or 2-digit numbers by a 1-digit number.
AP330	SMMA_ LO_01858	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	Identify four arrays for a given product (products 6 to 30).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AP340	SMMA_ LO_01859	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	Create arrays for a given product (products 6 to 30).
DV310	SMMA_ LO_00279	Operations with Numbers	Use Pictorial Models to Solve Division Problems	Divide using graphic models (combinations to 5 x 5).
WP300	SMMA_ LO_01564	Operations with Numbers	Use Pictorial Models to Solve Division Problems	Make a picture to solve a partitive division problem (dividends to 20).
WP305	SMMA_ LO_01565	Operations with Numbers	Use Pictorial Models to Solve Division Problems	Make a picture to solve a quotitive division problem (dividends to 20).
PS310	SMMA_ LO_01238	Operations with Numbers	Use Pictorial Models to Solve Division Problems	Make a picture to solve a division problem (math facts).
PS320	SMMA_ LO_01245	Operations with Numbers	Use Pictorial Models to Solve Division Problems	Identify a picture that represents a division problem (math facts).
PS300	SMMA_ LO_01237	Operations with Numbers	Use Pictorial Models to Solve Multiplication Problems	Make a picture to solve a multiplication problem (basic facts).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
PS325	SMMA_ LO_01246	Operations with Numbers	Use Pictorial Models to Solve Multiplication Problems	Identify a picture that represents a multiplication problem (basic facts).
WP360	SMMA_ LO_01584	Operations with Numbers	Use Pictorial Models to Solve Multiplication Problems	Make a picture to solve a multiplication problem involving total cost (2 to 5 items, 5, 10, or 15 cents each).
WP315	SMMA_ LO_01571	Operations with Numbers	Solve Problems Involving Money	Find twice the amount of the money shown (products to 20).
WP320	SMMA_ LO_01572	Operations with Numbers	Solve Multiplication Prob- lems in Context	Solve a multiplication problem in context (counting feed- back, products 2 x 2 to 5 x 5).
WP310	SMMA_ LO_01570	Operations with Numbers	Solve Multiplication Prob- lems in Context	Identify and solve an expression that represents a mul- tiplication problem in context (model shown, products to 32).
AD340	SMMA_ LO_00068	Operations with Numbers	Add Multiples of 10 Hori- zontally with Regrouping	Add two addends displayed horizontally (multiples of 10, sums 100 to 180, regrouping).
PS380	SMMA_ LO_01272	Operations with Numbers	Solve Problems with Miss- ing/Extra Information	Identify extra information in a problem.

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
PS340	SMMA_ LO_01254	Operations with Numbers	Identify Number Sentences to Solve Problems	Identify a number sentence that can be used to solve an addition, a subtraction, or a multiplication problem (one- or two-digit).
FR345	SMMA_ LO_02034	Operations with Numbers	Determine Fractional Amounts Using Region- s/Areas	Model a fraction $a/b$ by filling in $a$ out of $b$ sections parts in a fraction model.
NC307	SMMA_ LO_02037	Operations with Numbers	Use Com- mutative/Associative Prop- erties of Multiplication	Apply the Associative Property of Multiplication as a strategy to multiply whole numbers.
NC300	SMMA_ LO_02036	Operations with Numbers	Use Com- mutative/Associative Prop- erties of Multiplication	Apply the Commutative Property of Multiplication as a strategy to multiply and divide whole numbers.
DV390	SMMA_ LO_02039	Operations with Numbers	Divide Using Basic Math Facts	Represent a division problem as an unknown-factor problem; then find the missing factor.

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC315	SMMA_ LO_02038	Operations with Numbers	Evaluate Integer Expressions Using Distributive Property of Multiplication	Apply the Distributive Property as a strategy to multiply whole numbers.
AD300	SMMA_ LO_00047	Operations with Numbers	Add Multiples of 10 Vertically	Add two multiples of 10 (student choice, sums 20 to 180).
AD312	SMMA_ LO_00053	Operations with Numbers	Add Multiples of 10 Vertically	Add two addends (student choice, two-digit addends, sums 100 to 189, regrouping 10's to 100's).
AD305	SMMA_ LO_00051	Operations with Numbers	Add Multiples of 10 with Regrouping	Add three multiples of 10 (sums 100 to 190, regrouping).
AD365	SMMA_ LO_00058	Operations with Numbers	Add Multiples of 10 without Regrouping	Add two numbers (student choice, three-digit addends, sums 200 to 999, no regrouping).
AD355	SMMA_ LO_00046	Operations with Numbers	Add Multiples of 100 without Regrouping	Add two multiples of 100 (student choice, sums 200 to 900).
AD360	SMMA_ LO_00057	Operations with Numbers	Add Multiples of 100 without Regrouping	Add two addends (100 and a three-digit number, sums 200 to 900).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD330	SMMA_ LO_00092	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers with Regrouping	Add three addends (student choice, one- and two-digit addends, sums 100 to 207, regrouping).
AD310	SMMA_ LO_00087	Operations with Numbers	Add One-Digit/Two-Digit Whole Numbers without Regrouping	Add three addends (student choice, one- and two-digit addends, sums 20 to 99, no regrouping).
AD320	SMMA_ LO_00060	Operations with Numbers	Add Two-Digit Whole Num- bers with Regrouping	Add three addends (student choice, two-digit addends, sums 100 to 199, regrouping from tens to hundreds place).
AD335	SMMA_ LO_00095	Operations with Numbers	Add Two-Digit Whole Num- bers with Regrouping	Add three addends (student choice, two-digit addends, sums 40 to 297, regrouping).
AD315	SMMA_ LO_00056	Operations with Numbers	Add Two-Digit Whole Num- bers without Regrouping	Add three addends (two-digit addends, sums 33 to 99, no regrouping).
AD385	SMMA_ LO_00083	Operations with Numbers	Add Two-Digit/Three-Digit Whole Numbers with Regrouping	Add two addends (student choice, a two-digit and a three-digit addend, sums 120 to 999, regrouping ones and tens).



Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD395	SMMA_ LO_00089	Operations with Numbers	Add Two-Digit/Three-Digit Whole Numbers with Regrouping	Add two addends (a two-digit and a three-digit addend, sums 111 to 899, regrouping).
WP385	SMMA_ LO_01569	Operations with Numbers	Identify Division Number Sentences in Context	Identify the number sentence that represents a division problem in context (model shown, dividends to 20).
SU345	SMMA_ LO_01447	Operations with Numbers	Subtract Multiples of 10	Subtract two multiples of 100 (student choice, minuends 200 to 900, subtrahends 100 to 800).
SU300	SMMA_ LO_01448	Operations with Numbers	Subtract Multiples of 10	Subtract two multiples of 10 (minuends 100 to 180, subtrahends 10 to 90).
SU350	SMMA_ LO_01458	Operations with Numbers	Subtract Multiples of 10	Subtract a three-digit multiple of 10 from a number (student choice, minuends 222 to 999, no regrouping).
SU305	SMMA_ LO_01456	Operations with Numbers	Subtract Whole Numbers without Regrouping	Subtract (student choice, minuends 110 to 199, two-digit subtrahends, no regrouping).
SU310	SMMA_ LO_01457	Operations with Numbers	Subtract Whole Numbers without Regrouping	Subtract (student choice, minuends 122 to 199, subtrahends 11 to 88, no regrouping).

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU360	SMMA_ LO_01460	Operations with Numbers	Subtract Whole Numbers without Regrouping	Subtract (student choice, minuends and subtrahends 110 to 999).
MU395	SMMA_ LO_00885	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (products 2 x 20 to 90 x 9, multiples of 10).
DC375	SMMA_ LO_00186	Place Value	Identify Decimal Number Using a Number Line	Mark the point on a number line that represents a decimal number (0.1 to 0.9).
NC367	SMMA_ LO_01036	Place Value	Round Three-Digit Numbers to Nearest Hundred	Round a three-digit number to the nearest hundred.
NC375	SMMA_ LO_01650	Place Value	Round to Nearest Hundred	Round a three-digit number to the nearest hundred.
NC382	SMMA_ LO_01651	Place Value	Round to Nearest Hundred	Round a three-digit number to the nearest hundred.
NC390	SMMA_ LO_01652	Place Value	Round to Nearest Hundred	Round a three-digit number to the nearest hundred.

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC395	SMMA_ LO_01081	Place Value	Round to Nearest Hundred	Round a three- to four-digit number to the nearest hundred.
NC337	SMMA_ LO_01028	Place Value	Round to Nearest Ten	Round a two-digit number to the nearest ten.
NC345	SMMA_ LO_01647	Place Value	Round to Nearest Ten	Round two-digit numbers to the nearest ten.
NC350	SMMA_ LO_01648	Place Value	Round to Nearest Ten	Round a two-digit number to the nearest ten.
NC360	SMMA_ LO_01649	Place Value	Round to Nearest Ten	Round a two-digit number to the nearest ten.
NC330	SMMA_ LO_01059	Place Value	Round to Nearest Ten	Round a two-digit or three-digit number to the nearest ten.
NC378	SMMA_ LO_02213	Place Value	Determine Place Value of Digits	Determine the place value of a digit in a four-digit number.

Grade 3		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC370	SMMA_ LO_02222	Place Value	Determine Place Value of Digits	Find patterns in the multiplication table.
NC379	SMMA_ LO_02214	Place Value	Relate Words, Models and Numbers of Four- Digit Numbers	Relate word names, expanded form, and numbers of four-digit numbers.
DV395	SMMA_ LO_02240	Written Equations	Determine Whether an Equation is True or False	Identify the true multiplication or division equations.

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## Patterns, Algebra, and Functions

Grade 3		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS360	SMMA_ LO_01655	Functions and Relations	Describe the Rule in a Relation or Function	Describe the relationship between two sets of numbers in a relation or function using multiplication (factors 2 - 5).
EQ330	SMMA_ LO_00338	One-Step Equations	Find the Difference to Identify the Variable	Solve for c in $a - b = c$ (minuends 20 to 99, subtrahends 1 to 9, no regrouping).
EQ350	SMMA_ LO_00340	One-Step Equations	Find the Difference to Identify the Variable	Solve for c in $a - b = c$ (minuends 20 to 99, two-digit subtrahends, no regrouping).
EQ375	SMMA_ LO_00342	One-Step Equations	Find the Difference to Identify the Variable	Solve for c in $a - b = c$ (minuends 20 to 99, regrouping).
EQ300	SMMA_ LO_00335	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a, b, or c in $a + b + c = d$ (sums 10 to 19).
EQ320	SMMA_ LO_00336	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a + b = c$ (sums 10 to 108).

Grade 3		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ360	SMMA_ LO_00341	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a + b = c$ (sums 12 to 98).
EQ380	SMMA_ LO_00343	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a - b = c$ (minuends 20 to 99, no regrouping).
AD345	SMMA_ LO_00074	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (multiples of 10, sums 100 to 180).
MU315	SMMA_ LO_00856	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing factor (vertical products to $5 \times 5$ ).
AD350	SMMA_ LO_00086	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in a number sentence (two addends, sums 100 to 199, regrouping), given horizontally.
AD390	SMMA_ LO_00088	Open Sentences	Find the Missing Addend in a Number Sentence	Find the missing addend in an number sentence (a two-digit and a three-digit addend, multiples of 10, sums 110 to 990).

Grade 3		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ347	SMMA_LO_00339	Open Sentences	Find the Missing Addend in a Number Sentence	Determine the unknown whole number in an equation relating four whole numbers using comparative relational thinking.
MU320	SMMA_LO_00858	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor displayed horizontally (products to $5 \times 5$ ).
MU335	SMMA_LO_00860	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor (vertical products $1 \times 6$ to $5 \times 9$ ).
MU340	SMMA_LO_00862	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor (products $1 \times 6$ to $5 \times 9$ ).
MU360	SMMA_LO_00864	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor (vertical products $1 \times 6$ to $9 \times 5$ ).
MU365	SMMA_LO_00866	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor displayed horizontally (products $6 \times 1$ to $9 \times 5$ ).
MU385	SMMA_LO_00873	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor (products $6 \times 6$ to $9 \times 9$ ).

Grade 3		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
MU390	SMMA_ LO_00877	Open Sen- tences	Find the Missing Factor in a Number Sentence	Find the missing factor (horizontal products 6 x 6 to 9 x 9).
GE325	SMMA_ LO_00607	Patterns	Identify the Missing Picture in a Pattern	Identify the missing picture in a 1-2-3-1-2-3 pattern.
NC372	SMMA_ LO_02239	Patterns	Extend a Numeric Pattern	
PS390	SMMA_ LO_01266	Two-Step Equations	Work Backwards to Solve a Two-Step Problem	Work backwards to solve a problem with a missing num- ber.
PS375	SMMA_ LO_01270	Written Equa- tions	Identify the Equation That Is a Translation of the Written Phrase	Identify a number sentence that could be used to solve a multiplication problem.

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## Speed Games (Fluency)

Grade 3		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG300	SMMA_SG_00300	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 15.
SG310	SMMA_SG_00310	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 15.
SG340	SMMA_SG_00340	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 15.
SG390	SMMA_SG_00390	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 20.
SG320	SMMA_SG_00320	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.
SG360	SMMA_SG_00360	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.

Grade 3		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG370	SMMA_SG_00370	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.
SG380	SMMA_SG_00380	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.

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## Probability and Discrete Mathematics

Grade 3		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR300	SMMA_LO_01665	Probability	Determine Possible Outcomes for Independent Events (Spinners)	Given a graphical representation of two spinners, count all the possible outcomes for spinning each spinner once.

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## Performance Tasks

Grade 3		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT946	SMMA_ LO_02500	Problem Solving	1. Solve addition/subtraction problems in context	Add and subtract data from a bar graph (whole numbers within 1000) to solve real-world problems.
PT949	SMMA_ LO_02501	Problem Solving	2. Solve multiplication problems in context.	Multiply within 100. Add within 1000 to solve problems.
PT952	SMMA_ LO_02502	Problem Solving	3. Order fractions.	Compare and order fractions with the same denominator. Identify and generate equivalent fractions.

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# Data Analysis

Grade 4		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
AP465	SMMA_ LO_01311	Data Interpretation	Interpret Categorical Data Not from a Chart or Table	Identify all the towns with temperatures below 32 degrees Fahrenheit on a weather map.
AP495	SMMA_ LO_01312	Data Interpretation	Interpret Categorical Data Not from a Chart or Table	Predict the effect of changing temperatures on the weather.
AP407	SMMA_ LO_01328	Data Interpretation	Read and Interpret Tables and Charts	Graph and interpret rainfall data in a chart.
AP491	SMMA_ LO_02248	Data Interpretation	Collect, Organize, Analyze Data	Solve real-world problems with numerical data.
AP450	SMMA_ LO_01697	Graph, Chart, and Table Construction	Construct a Line Graph	Create a line graph using data from a table.
AP440	SMMA_ LO_01696	Graph, Chart, and Table Construction	Construct a Vertical Bar Graph Using Data from a Chart or Table	Create a bar graph using data from a chart of values.

Grade 4		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
AP430	SMMA_ LO_00150	Graph, Chart, and Table Construction	Read and Interpret Horizontal or Vertical Pictographs	Read and interpret a horizontal or vertical pic- tograph (six items).
PR450	SMMA_ LO_01172	Graph, Chart, and Table Construction	Read and Interpret Pictographs	Compare the amounts of two rows in a pic- tograph whose scale is 2, 5, or 10 items per pic- ture.
PR475	SMMA_ LO_01174	Graph, Chart, and Table Construction	Read and Interpret Pictographs	Compare the amounts of two rows in a pic- tograph whose scale is 2, 5, or 10 items per pic- ture.
AP460	SMMA_ LO_01695	Graph, Chart, and Table Construction	Read and Interpret Tables and Charts	Read and interpret a table.
PR415	SMMA_ LO_02196	Graph, Chart, and Table Construction	Construct a Line Plot	Make a line plot to show measurement data in fractions of a unit.
PR400	SMMA_ LO_01164	Measures of Center and Spread	Determine the Mode of a Data Set	Identify the most frequent value (mode) using a line plot.

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# Geometry

Grade 4		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE457	SMMA_ LO_00624	Angle Relationships	Determine the Measure of an Angle	Determine whether an angle is larger than, smaller than, or the same size as a right angle.
GE495	SMMA_ LO_00657	Angle Relationships	Determine the Measure of an Angle	Identify the better estimate for an angle measure.
GE476	SMMA_ LO_02164	Angle Relationships	Determine the Measure of an Angle	Determine the angle measure for a part of a circle.
GE478	SMMA_ LO_02165	Angle Relationships	Determine the Measure of an Angle	Determine the total one-degree angle measures of an angle..
GE470	SMMA_ LO_00628	Angle Relationships	Identify Acute, Obtuse, Right, and Straight Angles	Identify an angle as acute, right, or obtuse.
GE475	SMMA_ LO_00630	Angle Relationships	Identify Acute, Obtuse, Right, and Straight Angles	Identify right, acute, and obtuse angles in polygons.

Grade 4		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE477	SMMA_ LO_00631	Angle Relationships	Identify Acute, Obtuse, Right, and Straight Angles	Use a protractor to measure an angle.
GE420	SMMA_ LO_00617	Angle Relationships	Identify Angle Notation	Match the labeled angles to the correct angle notation.
GE490	SMMA_ LO_00644	Angle Relationships	Determine the Measure of an Angle Using a Protractor	Select the appropriate protractor to measure an angle.
ME496	SMMA_ LO_02251	Angle Relationships	Find the Missing Angle	Find the missing angle (total angle or missing angle).
GE415	SMMA_ LO_00616	Attributes of Three-Dimensional Figures	Identify Geometric Solids	Identify a geometric solid (cylinder, pyramid, or rectangular prism).
GE435	SMMA_ LO_00622	Attributes of Three-Dimensional Figures	Identify Geometric Solids	Identify geometric solids (cones, cubes, cylinders, pyramids, rectangular prisms, spheres).

Grade 4		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE480	SMMA_ LO_00632	Attributes of Three-Dimensional Figures	Identify Bases, Edges, Faces, and Vertices of Three-Dimensional Figures	Identify faces, edges, and vertices of solids.
GE412	SMMA_ LO_00615	Attributes of Two-Dimensional Figures	Identify and/or Classify Quadrilaterals	Identify the quadrilaterals in a set of figures.
GE430	SMMA_ LO_00620	Attributes of Two-Dimensional Figures	Identify and/or Classify Quadrilaterals	Identify parallelograms, rhombuses, and trapezoids.
GE432	SMMA_ LO_00621	Attributes of Two-Dimensional Figures	Identify and/or Classify Quadrilaterals	In a set of quadrilaterals, identify all the parallelograms.
GE460	SMMA_ LO_00625	Attributes of Two-Dimensional Figures	Identify the Vertices of a Polygon	Identify the set of vertices on a grid can be connected to form a figure (triangle, quadrilateral, rectangle, or square).



Grade 4		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE465	SMMA_ LO_00627	Attributes of Two-Dimensional Figures	Identify Two-Dimensional Figures by Name	Identify polygons and circles (pentagons, hexagons, octagons, parallelograms).
GE433	SMMA_ LO_02215	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Identify parallelograms by their attributes.
GE434	SMMA_ LO_02216	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Identify rectangles by their attributes.
GE425	SMMA_ LO_00619	Lines, Line Segments, and Rays	Identify Parallel and Perpendicular Lines	Identify parallel and perpendicular streets on a map.
GE455	SMMA_ LO_00579	Lines, Line Segments, and Rays	Identify Line Segments	Identify line segments in three- and four-sided figures.
GE445	SMMA_ LO_00605	Lines, Line Segments, and Rays	Identify Line Segments	Identify line segments.

Grade 4		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE422	SMMA_ LO_00618	Similarity and Congruence	Identify Figures as Being Similar, Congruent, or Neither	Identify two figures as being similar, congruent, or neither.
GE410	SMMA_ LO_00608	Symmetry	Draw Using Symmetry	Draw a vertical or horizontal line of symmetry.
GE400	SMMA_ LO_00595	Symmetry	Identify Lines of Symmetry	Identify the vertical line of symmetry.
GE405	SMMA_ LO_00597	Symmetry	Identify Lines of Symmetry	Identify the horizontal line of symmetry.
GE440	SMMA_ LO_00623	Symmetry	Identify Lines of Symmetry	Identify lines that are lines of symmetry.
GE450	SMMA_ LO_01699	Symmetry	Identify Lines of Symmetry	Identify the lines of symmetry in an object.

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# Measurement

Grade 4		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME400	SMMA_ LO_00786	Measurement of Two-Dimensional Figures	Calculate Area Using Non-standard Units	Using a grid, find the area of a simple figure (8 to 60 nonstandard units).
PS485	SMMA_ LO_01280	Measurement of Two-Dimensional Figures	Calculate the Area of an Irregular Figure	Find the area of an irregular figure displayed on a grid (12 to 50 square units).
ME490	SMMA_ LO_00805	Measurement of Two-Dimensional Figures	Determine Perimeter Using Metric Units	Find the perimeter of a polygon (metric units).
ME476	SMMA_ LO_02252	Measurement of Two-Dimensional Figures	Determine Perimeter Using Metric Units	Find the missing side length when given the perimeter or area of a rectangle.
ME475	SMMA_ LO_00802	Measurement of Two-Dimensional Figures	Identify and Compare Areas	Identify a figure with a given area on a geoboard (4 to 15 square units).

Grade 4		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME440	SMMA_ LO_00798	Time	Determine Elapsed Time on an Analog Clock	Find the time 5 to 50 minutes after the time shown (alog clock).
AP400	SMMA_ LO_01672	Time	Convert Time to Equivalent Units	Convert hours to minutes.
ME425	SMMA_ LO_00794	Units of Measure	Customary Units of Capacity and Volume	Identify the reasonable customary capacity of an object (cups, pints, quarts, and gallons).
ME450	SMMA_ LO_00799	Units of Measure	Customary Units of Capacity and Volume	Compare unlike customary units of capacity (cups, pints, quarts, and gallons).
ME460	SMMA_ LO_00800	Units of Measure	Customary Units of Linear Measure	Draw a line segment using a ruler (to 1/4 inch and 0.5 cm).
ME410	SMMA_ LO_00792	Units of Measure	Determine Equivalent Customary Units of Linear Measure	Compare unlike customary units of length (inches, feet, and yards).
AP427	SMMA_ LO_01703	Units of Measure	Measure Distance in Metric Units	Identify distances or objects that would be measured in cm, m, or km.

Grade 4		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME480	SMMA_ LO_00803	Units of Measure	Measure Height, Length, or Width in Metric Units	Identify the reasonable length, width, or height of an object (millimeters, centimeters, and meters).
AP415	SMMA_ LO_01704	Units of Measure	Metric Units of Capacity and Volume	Identify the appropriate unit of measure (l, kl, g, kg, m, km).
AP490	SMMA_ LO_00166	Units of Measure	Determine Equivalent Customary Units of Length	Express yards and feet as an equivalent number of feet, or feet and inches as an equivalent number of inches.
AP496	SMMA_ LO_02250	Units of Measure	Choose the Appropriate Measuring Instruments	Identify the correct tool to measure an attribute (weight, length, capacity, temperature) of an object.

\* Math Concepts and Skills

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# Number Sense and Operations

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP460	SMMA_ LO_01603	Estimation	Estimate Products/Quotients	Estimate the product by rounding the second factor. (two-digit number to the nearest 10).
WP475	SMMA_ LO_01606	Estimation	Estimate Products/Quotients	Estimate the distance by rounding ( $d = rt$ ).
WP425	SMMA_ LO_01591	Estimation	Estimate Sums/Differences Involving Money	Estimate the total cost of four items by rounding to the nearest dollar (sums to \$15.00).
AP405	SMMA_ LO_01669	Estimation	Estimate Sums/Differences Involving Money	Estimate the difference by rounding to the nearest dollar (minuends \$5.00 to \$20.00, subtrahends \$3.00 to \$15.00).
WP400	SMMA_ LO_01566	Estimation	Estimate Sums/Differences	Identify the expression that gives the best estimate for an addition or subtraction problem in context (two-digit numbers).
WP490	SMMA_ LO_01620	Estimation	Estimate Sums/Differences	Identify the best estimate for a sum using data in a table (three- and four-digit addends).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AP410	SMMA_ LO_01676	Estimation	Estimate Sums/Differences	Estimate the difference (three-digit, differences 100 to 800).
WP485	SMMA_ LO_01614	Estimation	Estimate Differences to Nearest Thousand	Estimate the difference of 2 four-digit numbers by rounding each to the nearest thousand.
WP495	SMMA_ LO_01621	Estimation	Estimate Sums to Nearest Hundred	Estimate the sum by rounding to the nearest hundred (three-digit addends).
WP410	SMMA_ LO_01675	Estimation	Estimate Sums to Nearest Hundred	Estimate the sum by rounding to the nearest hundred (three-digit addends).
FR450	SMMA_ LO_02146	Number Sense	Identify Expressions Equivalent to a Fraction	Determine addition expressions that are equivalent to a given fraction.
FR440	SMMA_ LO_00441	Number Sense	Add Fractions Using Models	Using models, add fractions, no simplifying (like denominators, thirds to eighths).
DC490	SMMA_ LO_00216	Number Sense	Compare Decimals to Hundredths	Compare two decimal numbers (10.01 to 99.99).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR415	SMMA_ LO_00438	Number Sense	Compare Fractions with Unlike Denominators	Using models, compare fractions (unlike denominators, halves to eighths).
FR407	SMMA_ LO_00448	Number Sense	Compare Fractions with Unlike Denominators	Compare fractions to 1 (denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100).
FR435	SMMA_ LO_00462	Number Sense	Compare Fractions with Unlike Denominators	Compare fractions (unlike denominators).
FR437	SMMA_ LO_00482	Number Sense	Compare Fractions with Unlike Denominators	Identify the greatest or least fraction in a problem (unlike denominators).
FR410	SMMA_ LO_00429	Number Sense	Compare Fractions with Unlike Denominators Using Models	Use a model to compare two fractions (halves to eighths, unlike denominators).
FR425	SMMA_ LO_00435	Number Sense	Compare Fractions with Unlike Denominators Using Models	Using models, compare fractions (unlike denominators, numerators equal to one, halves to sixteenths).



Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR425	SMMA_ LO_00436	Number Sense	Compare Fractions with Unlike Denominators Using Models	Using models, compare fractions (unlike denominators, denominators 2, 3, 4, 5, 6, 8, 10, 12).
FR412	SMMA_ LO_00437	Number Sense	Compare Fractions with Unlike Denominators Using Models	Identify the fraction that is greater than a given fraction (unlike denominators, halves to eighths).
DC475	SMMA_ LO_00209	Number Sense	Compare Fractions, Decim- als, and Percents	Compare decimals (to hundredths) to benchmark fractions.
NC454	SMMA_ LO_01068	Number Sense	Compare Numbers	Identify a set of numbers between two numbers, or less than or greater than a given number (101 to 999).
NC465	SMMA_ LO_01072	Number Sense	Compare Numbers	Identify a number that is one or two greater than or less than a five- or six-digit number.
NC460	SMMA_ LO_00350	Number Sense	Compare Products Using Symbols	Compare products (products 2 x 2 to 9 x 9).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC450	SMMA_ LO_01711	Number Sense	Compare Whole Numbers through Millions	Compare two whole numbers (three to seven-digit numbers).
FR460	SMMA_ LO_00443	Number Sense	Determine Equivalent Fractions Using Models	Using a model, rewrite a whole number as a fraction (halves to eighths).
FR402	SMMA_ LO_00483	Number Sense	Determine Equivalent Fractions Using Models	Identify the figures with the equivalent fractional parts shaded.
FR405	SMMA_ LO_00432	Number Sense	Identify/Compare Fractions Using a Number Line	Compare fractions to 1 on the number line (halves to eighths).
FR420	SMMA_ LO_00434	Number Sense	Identify/Compare Fractions Using a Number Line	Using a number line, compare fractions (like denominators, halves to sixteenths).
DC495	SMMA_ LO_00218	Number Sense	Order Decimals to Hundredths	Order three decimal numbers (tenths to hundredths).
FR442	SMMA_ LO_00440	Number Sense	Order Fractions with Unlike Denominators	Order three fractions from least to greatest (unlike denominators, halves to twelfths).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC447	SMMA_ LO_01710	Number Sense	Order Whole Numbers through Millions	Order five numbers from least to greatest (three- to six-digit numbers).
FR445	SMMA_ LO_00442	Number Sense	Subtract Fractions Using Models	Using models, subtract fractions, no simplifying (like denominators, halves to sixths).
NC405	SMMA_ LO_01040	Number Sense	Order Numbers to 10,001	Order four numbers from least to greatest (1,000 to 9,999).
FR462	SMMA_ LO_00446	Number Sense	Determine Equivalent Fractions and Mixed Numbers	Using a model, rewrite a mixed number as a fraction (halves to eighths).
FR487	SMMA_ LO_00449	Number Sense	Determine Equivalent Fractions and Mixed Numbers	Rewrite a fraction as a mixed number (halves to eighths).
FR465	SMMA_ LO_00450	Number Sense	Determine Equivalent Fractions and Mixed Numbers	Rewrite a mixed number as a fraction (fifths to ninths).
FR457	SMMA_ LO_02191	Number Sense	Determine Equivalent Fractions and Mixed Numbers	Represent a fraction $a/b$ as a sum of fractions $1/b$ , where $a$ and $b$ are whole numbers and $b > 0$ , including when $a > b$ .

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC442	SMMA_ LO_01039	Number Sense	Compare Numbers to 10,001	Compare numbers (1,000 to 9,999).
FR490	SMMA_ LO_00497	Number Sense	Order Fractions	Identify a list of fractions that is ordered from least to greatest (to sixths).
NC486	SMMA_ LO_01119	Number Sense	Prime and Composite Num- bers	Identify sets of prime and composite numbers.
DC400	SMMA_ LO_00185	Number Sense	Determine Equivalent Mixed Numbers and Decimals	Determine the fraction and decimal that represent a model (base-ten blocks, tenths, 0.1 to 0.9).
DC410	SMMA_ LO_00187	Number Sense	Determine Equivalent Mixed Numbers and Decimals	Enter a decimal number for a mixed number (tenths, 1.1 to 9.9).
DC470	SMMA_ LO_00205	Number Sense	Determine Equivalent Mixed Numbers and Decimals	Enter the decimal equivalent for a mixed number (hundredths, 100 in denominator).
DC415	SMMA_ LO_00191	Number Sense	Compare Decimals to Tenths	Compare decimal numbers (0.1 to 9.9).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC405	SMMA_ LO_00184	Number Sense	Determine Equivalent Fractions and Decimals	Match a fraction to a decimal (tenths, 0.1 to 0.9).
FR492	SMMA_ LO_00418	Number Sense	Determine Fractional Amounts Using Sets	Identify the picture that shows one number is one-half of another number.
FR400	SMMA_ LO_00451	Number Sense	Determine Equivalent Fractions	Generating equivalent fractions.
FR496	SMMA_ LO_02249	Number Sense	Determine Equivalent Fractions	Write equivalent fractions with the denominator of 10 and 100.
FR455	SMMA_ LO_02189	Number Sense	Determine Equal Parts Using Fraction Models	Compose and decompose a fraction $a/b$ as a sum of parts $1/b$ .
EQ463	SMMA_ LO_02246	Number Sense	Solve Multiplication Problems in Context	Write a multiplication or division equation including an unknown that represents a given real-world scenario.
NC472	SMMA_ LO_01071	Number Theory	Factors	Identify the complete set of factors for a number (2 to 25).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC484	SMMA_ LO_01107	Number Theory	Factors	Determine three factors of a given number.
NC490	SMMA_ LO_01069	Number Theory	Multiples	Identify numbers that are multiples of a given number.
NC475	SMMA_ LO_01073	Number Theory	Prime and Composite Numbers	Find the factors of a number and determine if the number is prime or composite (3 to 30).
NC488	SMMA_ LO_01105	Number Theory	Prime and Composite Numbers	Identify prime and composite numbers (one- or two-digit).
NC480	SMMA_ LO_01093	Number Theory	Prime Factorization	Identify the prime factorization of a two-digit number.
FR417	SMMA_ LO_00495	Number Theory	Least Common Denominator	Compare fractions (unlike denominators, to ninths).
FR445	SMMA_ LO_00503	Operations with Numbers	Order Fractions	Identify the fraction that is between two fractions.

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC450	SMMA_LO_00199	Operations with Numbers	Add Decimals with Regrouping	Add decimal numbers (sums less than 10.0, regrouping).
DC420	SMMA_LO_00192	Operations with Numbers	Add Decimals with Regrouping	Add two decimal numbers (tenths, sums 1.0 to 2.0, regrouping).
DC455	SMMA_LO_00201	Operations with Numbers	Add Decimals with Regrouping	Add two decimal numbers (sums 1.0 to 98.9, regrouping).
DC425	SMMA_LO_00193	Operations with Numbers	Add Decimals without Regrouping to Tenths	Add two decimal numbers using mental math (sums 1.1 to 9.9, no regrouping).
DC435	SMMA_LO_00196	Operations with Numbers	Add Decimals without Regrouping to Tenths	Add two decimal numbers using mental math (sums 10.1 to 99.9, no regrouping).
FR442	SMMA_LO_01709	Operations with Numbers	Add Fractions with Like Denominators	Add fractions with like denominators (no simplifying).
WP440	SMMA_LO_01597	Operations with Numbers	Add Three-Digit Whole Numbers with Regrouping in Context	Solve an addition problem in context (3 three-digit addends, regrouping).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD400	SMMA_ LO_00059	Operations with Numbers	Add Two-Digit/Three-Digit Whole Numbers with Regrouping	Add two addends (student choice, a two-digit and a three-digit addend, sums 120 to 998, regrouping).
WP415	SMMA_ LO_01583	Operations with Numbers	Add/Subtract Money	Make a picture to find the change received from a purchase (change back from \$1.00).
AP480	SMMA_ LO_00165	Operations with Numbers	Add/Subtract Money	Determine the value of a combination of nickels, dimes, and quarters (values to \$5.00).
NC450	SMMA_ LO_01066	Operations with Numbers	Determine Divisibility of Whole Number Factors	Identify the number that is divisible by a given factor (numbers 2 to 81, factors 2 to 9).
NC485	SMMA_ LO_01101	Operations with Numbers	Determine Divisibility of Whole Number Factors	Identify which numbers are divisible by another number (divisors 2 to 10).
DV410	SMMA_ LO_00286	Operations with Numbers	Divide Basic Math Facts	Divide (combinations 2 x 10 to 5 x 12, no remainder).
DV425	SMMA_ LO_00288	Operations with Numbers	Divide Basic Math Facts	Divide (combinations 5 x 9 to 6 x 12, no remainder).



Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DV460	SMMA_ LO_00292	Operations with Numbers	Divide Whole Numbers with Remainders Using Long Division	Divide using the long division algorithm (one-digit divisor, remainder).
DV440	SMMA_ LO_00290	Operations with Numbers	Divide Whole Numbers without Remainders Using Long Division	Divide using the long division algorithm (one-digit divisor, no remainder).
DV450	SMMA_ LO_00294	Operations with Numbers	Divide Whole Numbers without Remainders Using Long Division	Divide using partial quotients (one-digit divisor, no remainder).
MU415	SMMA_ LO_00871	Operations with Numbers	Multiply Basic Math Facts	Multiply whole numbers using place value strategies (products 2 x 11 to 10 x 15).
MU400	SMMA_ LO_00875	Operations with Numbers	Multiply Basic Math Facts	Multiply a one-digit number by a two-digit number (products 2 x 12 to 9 x 12).
MU470	SMMA_ LO_00878	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (student choice, 2-digit multiple of 10 x 1-digit, products 20 x 2 to 90 x 9).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU425	SMMA_ LO_00889	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (products 20 x 20 to 90 x 90, multiples of 10).
NC435	SMMA_ LO_01061	Operations with Numbers	Skip Counting	Count by 8's or 9's (up to 90).
WP435	SMMA_ LO_01595	Operations with Numbers	Solve Addition Problems in Context	Solve an addition problem using data in a table (sums 100 to 198).
WP405	SMMA_ LO_01573	Operations with Numbers	Solve Division Problems in Context	Solve a division problem in context by rounding the quotient to the next whole number (model shown).
WP455	SMMA_ LO_01600	Operations with Numbers	Solve Division Problems in Context	Solve a one-step division problem (math facts 2 $\times$ 2 to 9 $\times$ 9).
WP465	SMMA_ LO_01604	Operations with Numbers	Solve Multiplication Problems in Context	Solve a multiplication problem in context (one-, two-, and three-digit factors).
PS425	SMMA_ LO_01267	Operations with Numbers	Solve Problems with Missing/ Extra Information	Identify the method to solve a multiplication problem with extra information.

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
PS435	SMMA_LO_01268	Operations with Numbers	Solve Problems with Missing/Extra Information	Identify the method to solve a division problem with extra information.
PS460	SMMA_LO_01274	Operations with Numbers	Solve Problems with Missing/Extra Information	Identify the missing information needed to solve a two-step problem; then solve the problem.
AP455	SMMA_LO_01310	Operations with Numbers	Solve Subtraction Problems in Context	Calculate the difference between the life spans of two animals (differences 2 to 59).
WP450	SMMA_LO_01599	Operations with Numbers	Subtract Decimals with Regrouping to Tenths	Solve a decimal subtraction problem in context (tenths, regrouping).
DC445	SMMA_LO_00198	Operations with Numbers	Subtract Decimals with Regrouping to Tenths	Subtract decimal numbers (minuends 2.0 to 9.9, subtrahends 0.1 to 0.9, regrouping).
DC465	SMMA_LO_00203	Operations with Numbers	Subtract Decimals with/without Regrouping to Tenths	Subtract decimal numbers (minuends and subtrahends 0.1 to 99.9, with or without regrouping).
DC430	SMMA_LO_00195	Operations with Numbers	Subtract Decimals without Regrouping to Tenths	Subtract decimal numbers (minuends and subtrahends 0.1 to 9.9, no regrouping).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC440	SMMA_ LO_00197	Operations with Numbers	Subtract Decimals without Regrouping to Tenths	Subtract decimal numbers using mental math (minuends and subtrahends 10.1 to 99.9, no regrouping).
WP445	SMMA_ LO_01598	Operations with Numbers	Subtract Money Amounts	Find the change from one dollar (item costs 55 to 99 cents).
SU400	SMMA_ LO_01493	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens Place	Subtract a three-digit number from a four-digit number (regrouping from the tens place).
SU475	SMMA_ LO_01496	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hundreds Place	Subtract a three-digit number from a four-digit number (regrouping from the tens and hundreds places).
SU425	SMMA_ LO_01494	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Thousands Place	Subtract a three-digit number from a four-digit number (regrouping from the tens and thousands places).
SU450	SMMA_ LO_01495	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Thousands Place	Subtract a three-digit number from a four-digit number (regrouping from the tens and thousands places).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR447	SMMA_ LO_00445	Operations with Numbers	Subtraction Fractions from 2	Identify the difference when a fraction is subtracted from 1 (fourths to twelfths).
AP420	SMMA_ LO_01715	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	Identify equivalent arrays with different factors.
AP425	SMMA_ LO_01716	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	Use partial sums and arrays to solve a two-digit by a one-digit multiplication problem.
AD450	SMMA_ LO_00085	Operations with Numbers	Add Three-Digit Whole Numbers with Regrouping	Add two addends (student choice, three-digit addends, sums 210 to 999, regrouping ones).
AD475	SMMA_ LO_00091	Operations with Numbers	Add Three-Digit Whole Numbers with Regrouping	Add two addends (student choice, three-digit addends, sums 1010 to 1898, regrouping).
WP430	SMMA_ LO_01592	Operations with Numbers	Use Pictorial Models to Solve Multiplication Problems	Make a picture to solve a multistep addition and multiplication problem in context.

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DV475	SMMA_ LO_00312	Operations with Numbers	Divide Integers	Find the quotient of b divided by a (combinations 6 x 13 to 9 x 19).
DV490	SMMA_ LO_00314	Operations with Numbers	Determine Estimate for Long Division Problem	Find compatible numbers to estimate the quotient (three-digit dividends, one-digit divisors).
PS405	SMMA_ LO_01261	Operations with Numbers	Use Logic to Solve an Addi- tion Problem	Use logical reasoning to complete an addition puzzle with two three-digit addends.
PS490	SMMA_ LO_01286	Operations with Numbers	Connect Pictoral Model with Addition Number Sentence	Use a picture to solve an addition problem with three addends.
PS400	SMMA_ LO_01663	Operations with Numbers	Use Conceptual Models to Understand Division	Share a set of objects equally to show a division problem (6, 7, 10, or 12 objects).
FR487	SMMA_ LO_02005	Operations with Numbers	Relate Fraction to Model	Use fraction models to relate a fraction to a whole number times a unit fraction. Then, write an equation for this relationship.

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR490	SMMA_ LO_02006	Operations with Numbers	Multiply Fractions and Whole Numbers	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.
FR495	SMMA_ LO_02007	Operations with Numbers	Add Fractions with Unlike Denominators	Express a fraction with denominator 10 as an equivalent fraction with denominator 100. Then, add that fraction to another fraction with denominator 100.
EQ400	SMMA_ LO_02008	Operations with Numbers	Create an Equation That Is a Translation of a Written Phrase	Translate a verbal statement of a multiplicative comparison into a multiplication equation.
WP412	SMMA_ LO_02009	Operations with Numbers	Solve Multiplication/Division Problems in Context	Use a model to represents a word problem involving multiplicative comparison. Then, use an equation to represent the solution to the word problem.
WP477	SMMA_ LO_02004	Operations with Numbers	Add Fractions with Like Denominators Using Models	Use a model and an equation to solve word problems involving the addition of fractions with like denominators.
WP480	SMMA_ LO_02016	Operations with Numbers	Subtract Fractions with Like Denominators Using Models	Use a model and an equation to solve word problems involving the subtraction of fractions with like denominators.

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
EQ410	SMMA_ LO_02025	Operations with Numbers	Create a Written Phrase That Is a Translation of the Equation	Interpret a multiplication equation by writing a comparison statement.
AD425	SMMA_ LO_00061	Operations with Numbers	Add Three-Digit Whole Num- bers Vertically with Regroup- ing	Add two addends (student choice, three-digit addends, sums 200 to 998, regrouping).
MU410	SMMA_ LO_00869	Operations with Numbers	Multiply Two-Digit by One- Digit Whole Numbers	Multiply a two-digit number by a one-digit number (student choice, vertical, products 10 x 1 to 12 x 4).
MU420	SMMA_ LO_00870	Operations with Numbers	Multiply Two-Digit by One- Digit Whole Numbers	Multiply a two-digit number by a one-digit number (student choice, products 10 x 2 to 15 x 5).
MU425	SMMA_ LO_00872	Operations with Numbers	Multiply Two-Digit by One- Digit Whole Numbers	Multiply a two-digit number by a one-digit number (student choice, products 16 x 2 to 19 x 5).
MU422	SMMA_ LO_00874	Operations with Numbers	Multiply Two-Digit by One- Digit Whole Numbers	Multiply a two-digit number by a one-digit number (student choice, products 10 x 6 to 15 x 9).



Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU465	SMMA_ LO_00876	Operations with Numbers	Multiply Two-Digit by One-Digit Whole Numbers	Multiply whole numbers (products 16 x 6 to 19 x 9).
MU470	SMMA_ LO_00880	Operations with Numbers	Multiply Two-Digit by One-Digit Whole Numbers	Multiply a two-digit number by a one-digit number (student choice, products 21 x 2 to 99 x 9).
MU455	SMMA_ LO_00894	Operations with Numbers	Multiply Two-Digit by One-Digit Whole Numbers	Multiply a 1-digit number by a 2-digit number (products 13 x 1 to 19 x 5).
MU450	SMMA_ LO_00896	Operations with Numbers	Multiply Two-Digit by One-Digit Whole Numbers	Multiply a 1-digit number by a 2-digit number (products 12 x 6 to 19 x 9).
MU472	SMMA_ LO_00884	Operations with Numbers	Use Conceptual Models to Understand Multiplication	Multiply whole numbers (products 10 x 10 to 15 x 15) using models and equations.
FR467	SMMA_ LO_00460	Operations with Numbers	Add Mixed Numbers with Like Denominators	Add mixed numbers; no simplifying (like denominators, thirds to twelfths).
FR470	SMMA_ LO_00463	Operations with Numbers	Add Mixed Numbers with Like Denominators	Add mixed numbers; (denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR482	SMMA_ LO_00480	Operations with Numbers	Add Mixed Numbers with Like Denominators	Add mixed numbers within a context; simplify if necessary (like denominators).
FR472	SMMA_ LO_00484	Operations with Numbers	Add Mixed Numbers with Like Denominators	Add mixed numbers; simplify if necessary (like denominators).
FR475	SMMA_ LO_00461	Operations with Numbers	Subtract Mixed Numbers with Like Denominators	Subtract mixed numbers; no simplifying (like denominators, thirds to twelfths).
FR480	SMMA_ LO_00485	Operations with Numbers	Subtract Mixed Numbers with Like Denominators	Subtract mixed numbers (like denominators 2, 3, 4, 5, 6, 8, 10, 12).
FR485	SMMA_ LO_00481	Operations with Numbers	Subtract Mixed Numbers with Like Denominators	Subtract mixed numbers in context; simplify if necessary (like denominators).
MU475	SMMA_ LO_00882	Operations with Numbers	Multiply Three-Digit by One-Digit Whole Numbers	Multiply a three-digit number by a one-digit number (student choice, products 100 x 2 to 990 x 9, multiples of 10).
MU480	SMMA_ LO_00886	Operations with Numbers	Multiply Three-Digit by One-Digit Whole Numbers	Multiply whole numbers (products 101 x 2 to 999 x 9).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU485	SMMA_ LO_00892	Operations with Numbers	Multiply Four-Digit by One-Digit Whole Numbers	Multiply whole numbers (products 1000 x 2 to 9999 x 9).
MU440	SMMA_ LO_00893	Operations with Numbers	Multiply/Divide Whole Numbers to Determine Missing Factor	Find the missing factor (products 20 x 20 to 90 x 90, multiples of 10).
MU490	SMMA_ LO_00912	Operations with Numbers	Estimate Products	Estimate the product of two numbers (factors 101 to 949).
MU495	SMMA_ LO_00913	Operations with Numbers	Estimate Missing Factors	Estimate the missing factor in a number sentence (round to the nearest ten, products 2,010 to 81,090).
DV480	SMMA_ LO_02238	Operations with Numbers	Divide Using Basic Math Facts	Identify a missing factor problem that is equal to a given division problem.
DC412	SMMA_ LO_00188	Place Value	Identify Decimal Number Using a Number Line	Find the missing decimal number on a number line (tenths, 0.1 to 0.9).
DC480	SMMA_ LO_00213	Place Value	Identify Decimal Number Using a Number Line	Enter a decimal number on a number line (1.11 to 9.89).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC485	SMMA_ LO_00215	Place Value	Identify Decimal Number Using a Number Line	Find the missing decimal number on a number line (1.0 to 9.89).
DC460	SMMA_ LO_00202	Place Value	Identify Decimal Place Value to Hundredths	Identify the decimal number with a 0 to 9 in the tenths or hundredths place.
NC430	SMMA_ LO_01045	Place Value	Identify Place Value to 1,000,001	Identify a number with a given digit in the ones to hundred thousands place.
NC421	SMMA_ LO_01051	Place Value	Identify Place Value to 1,000,001	Find a number equal to 1 to 9 thousands, 0 to 9 hundreds, 0 to 9 tens, and 0 to 9 ones.
NC400	SMMA_ LO_01062	Place Value	Identify Place Value to 1,000,001	Identify the value of a given digit in a four-digit number.
NC433	SMMA_ LO_01064	Place Value	Identify Place Value to 1,000,001	Identify a number with a given digit in the thousands to hundred millions place.
NC436	SMMA_ LO_01070	Place Value	Identify Place Value to 1,000,000 Using Charts	Enter a number in a place-value chart (1,000,000 to 9,999,999).

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC470	SMMA_ LO_01075	Place Value	Identify Place Value to 1,000,000,000 Using Charts	Enter each individual digit in a place-value chart for a five- to nine-digit number given the name of the number.
NC418	SMMA_ LO_01043	Place Value	Relate Words, Models or Numbers to 1,000,001	Identify a number name for a four-, five- or six-digit numbers.
NC425	SMMA_ LO_01065	Place Value	Relate Words, Models or Numbers to 1,000,001	Enter the number for a word name (1000 to 9999).
NC427	SMMA_ LO_01076	Place Value	Relate Words, Models or Numbers to 1,000,001	Identify the number when given the word name (10,000 to 999,999).
NC412	SMMA_ LO_01046	Place Value	Identify Expanded Notation of Numbers to 1,000,001	Identify the expanded notation of a five- or six-digit number.
NC409	SMMA_ LO_01038	Place Value	Identify Expanded Notation of Numbers to 10,001	Identify the expanded notation of a four-digit number.
NC463	SMMA_ LO_01106	Place Value	Round to A Given Place	Round four- five- and six-digit numbers to a given place.

Grade 4		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC403	SMMA_ LO_01032	Place Value	Represent Numbers to 1,000 Using Base-Ten Blocks	Show a four-digit number with base-ten blocks.
NC406	SMMA_ LO_01083	Place Value	Identify Place Value to 1,000,000,001	Identify the digits in the period (hundreds, thousands, millions, and billions).
NC415	SMMA_ LO_01097	Place Value	Estimate Products	Express a number in expanded notation or determine the number from an expanded notation.
EQ462	SMMA_ LO_02245	Written Equations	Determine Whether an Equation is True or False	Identify true equations which contain the four operations.

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# Patterns, Algebra, and Functions

Grade 4		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
NC497	SMMA_ LO_01653	Functions and Relations	Describe the Rule in a Relation or Function	Describe the relationship between two sets of numbers in a relation or function using multiplication, addition, or subtraction.
PS401	SMMA_ LO_01654	Functions and Relations	Describe the Rule in a Relation or Function	Use a given rule to find the missing numbers.
PS410	SMMA_ LO_01722	Functions and Relations	Describe the Rule in a Relation or Function	Understand that a function is a rule that assigns to each input exactly one output.
EQ450	SMMA_ LO_00347	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a - b = c$ (minuends 21 to 99, subtrahends 1 to 9, no regrouping).
EQ425	SMMA_ LO_00345	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a + b = c$ (sums 101 to 199, no regrouping).

Grade 4		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ475	SMMA_ LO_00351	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \times b = c$ (products 1 x 2 to 5 x 9).
EQ490	SMMA_ LO_00352	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \div b = c$ .
AP475	SMMA_ LO_01686	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve a one-step equation (addition, sums to 100).
WP420	SMMA_ LO_01585	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve a division problem about money with extra information (round quotient to the nearest whole number).
PS440	SMMA_ LO_01687	Open Sentences	Find the Missing Addend in a Number Sentence	Identify the missing variable of addition or subtraction equations (sums 10 to 50, minuends 10 to 50).
DV400	SMMA_ LO_00285	Open Sentences	Find the Missing Dividend or Divisor in a Number Sentence	Find the missing dividend or divisor (combinations 4 x 4 to 7 x 7, no remainder).
MU405	SMMA_ LO_00881	Open Sentences	Find the Missing Factor in a Number Sentence	Find the missing factor (products 2 x 2 to 12 x 12).



Grade 4		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
MU445	SMMA_ LO_00891	Open Sen- tences	Find the Missing Factor in a Number Sentence	Find the missing factor (products 20 x 11 to 90 x 99, mul- tiples of 10).
EQ440	SMMA_ LO_00346	Open Sen- tences	Find the Product to Identify the Variable	Solve for c in $a \times b = c$ (products 1 x 2 to 5 x 9).
EQ460	SMMA_ LO_00349	Open Sen- tences	Find the Quotient to Identify the Variable	Find the quotient (dividends 6 $\div$ 6 to 9 $\div$ 9).
NC422	SMMA_ LO_01056	Patterns	Extend a Numeric Pattern	Count by 2's, 3's, or 10's (11 to 209, not multiples of 2, 3, 10).
NC427	SMMA_ LO_01058	Patterns	Extend a Numeric Pattern	Count by 5's, 6's, or 7's (through 70).
PS470	SMMA_ LO_01276	Patterns	Extend a Numeric Pattern	Look for a pattern to solve a problem.
PS450	SMMA_ LO_01691	Patterns	Extend a Numeric Pattern	Extend a geometric pattern.

Grade 4		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
NC494	SMMA_ LO_01117	Patterns	Identify the Missing Number in a Geometric Sequence	Find a missing number in a geometric sequence (first number 1 to 5, factors 2 to 5).
PS420	SMMA_ LO_01288	Two-Step Equations	Work Backwards to Solve a Two-Step Problem	Work backward to solve a two-step problem.
PS495	SMMA_ LO_01289	Two-Step Equations	Choose a Method to Solve a Two-Step Problem	Choose a method to solve a two-step problem.
NC457	SMMA_ LO_00355	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Compare quotients (combinations 2 $\div$ 2 to 9 $\div$ 9).
PS465	SMMA_ LO_01275	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify an expression that can be used to solve a problem (inverse operations).
WP470	SMMA_ LO_01605	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the expression that represents a division problem in context; then solve the problem (dividends 12 to 81).

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## Speed Games (Fluency)

Grade 4		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG410	SMMA_SG_00410	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 20.
SG470	SMMA_SG_00470	Operations with Numbers	Add Using Basic Math Facts	Practice addition using basic facts; sums less than or equal to 20.
SG450	SMMA_SG_00450	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 12.
SG460	SMMA_SG_00460	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 12.
SG490	SMMA_SG_00490	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 12.
SG400	SMMA_SG_00400	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.

Grade 4		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG440	SMMA_SG_00440	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.
SG480	SMMA_SG_00480	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.

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## Probability and Discrete Mathematics

Grade 4		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR425	SMMA_LO_01717	Discrete Mathematics	Determine Number of Possible Arrangements	Determine the number of arrangements that can be made from two groups with two items.
AP470	SMMA_LO_01718	Discrete Mathematics	Determine Number of Possible Arrangements	Determine the arrangements that can be made with a group of two and a group of three items.

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## Performance Tasks

Grade 4		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT955	SMMA_ LO_02503	Problem Solving	1. Solve multi-step problems using four operations	Students use multi-digit operations to solve problems.
PT958	SMMA_ LO_02504	Problem Solving	2. Solve fraction problems in context.	Students add and subtract mixed numbers with like denominators. Students compare mixed numbers with unlike denominators.
PT961	SMMA_ LO_02505	Problem Solving	3. Convert measurement units	Students convert between measurement units.

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# Data Analysis

Grade 5		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR575	SMMA_ LO_01186	Graph, Chart, and Table Interpretation	Read and Interpret Stem-and- Leaf Plots	Identify the value of a data item on a stem-and- leaf plot.
PR590	SMMA_ LO_01188	Graph, Chart, and Table Interpretation	Read and Interpret Stem-and- Leaf Plots	Find the frequency of a single data item on a stem-and-leaf plot.
PR525	SMMA_ LO_01178	Graph, Chart, and Table Interpretation	Read and Interpret Line Graphs	Find the amount of increase or decrease between two points in a line graph.
AP560	SMMA_ LO_01324	Graph, Chart, and Table Interpretation	Read and Interpret Line Graphs	Interpret a line graph with time and temperature data, and add a point to line graph.
AP575	SMMA_ LO_01325	Graph, Chart, and Table Interpretation	Read and Interpret Line Graphs	Given the survival needs for a bug, interpret a line graph with time and temperature data.
WP590	SMMA_ LO_01619	Measures of Center and Spread	Determine the Mean of a Data Set in Context	Solve a problem in context by finding the average (mean) of three to seven numbers.

Grade 5		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR550	SMMA_ LO_01765	Measures of Center and Spread	Determine the Mode of a Data Set	Determine the mode of a set of data.
AP570	SMMA_ LO_01771	Data Interpretation	Construct a Bar Graph	Create a line graph.
AP580	SMMA_ LO_02194	Data Interpretation	Construct a Scatterplot	Represent paired data on a scatterplot.
PR535	SMMA_ LO_02198	Graph, Chart, and Table Construction	Problem Solve with Measurement Data from a Line Plot	Solve problems using fractional units of measurement data displayed in line plots.

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# Geometry

Grade 5		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE511	SMMA_ LO_00636	Angle Relationships	Determine the Measure of an Angle Using a Protractor	Use a protractor to measure an angle.
GE565	SMMA_ LO_00646	Angle Relationships	Determine the Measure of an Angle Using a Protractor	Measure an angle using the appropriate protractor.
GE590	SMMA_ LO_00650	Angle Relationships	Determine the Measure of an Angle Using a Protractor	Use a protractor to measure an angle in a triangle or quadrilateral; then find the sum of all the angles in the figure.
GE521	SMMA_ LO_00637	Angle Relationships	Identify Congruent Angles	Identify congruent angles.
GE545	SMMA_ LO_01728	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Classify and sort 2D geometric figures by properties and attributes.



Grade 5		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE547	SMMA_LO_02199	Attributes of Two-Dimensional Figures	Classify Figures Based on Their Attributes	Classify quadrilaterals based on their attributes.
GE595	SMMA_LO_00656	Attributes of Two-Dimensional Figures	Identify and/or Classify Quadrilaterals	Identify the true statement about a relationship among quadrilaterals.
GE500	SMMA_LO_01057	Coordinate Geometry	Points in the Coordinate Plane	Identify a point on a grid given an ordered pair, or identify the ordered pair for a point shown on the grid.
GE510	SMMA_LO_01077	Coordinate Geometry	Points in the Coordinate Plane	Find the coordinates for a point on a grid.
AP500	SMMA_LO_01735	Coordinate Geometry	Points in the Coordinate Plane	Graph a point on a coordinate grid (Quadrant I).
GE520	SMMA_LO_01092	Coordinate Geometry	Points in the Coordinate Plane	Identify a point on a coordinate grid given the ordered pair.

Grade 5		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE525	SMMA_ LO_00638	Lines, Line Segments, and Rays	Draw Parallel, Perpendicular, or Intersecting Lines	Draw parallel, perpendicular, or intersecting lines on a grid.
GE530	SMMA_ LO_00639	Lines, Line Segments, and Rays	Identify Parallel and Perpendicular Lines	Identify the pairs of parallel line segments in a geometric drawing.
GE505	SMMA_ LO_00635	Lines, Line Segments, and Rays	Identify Points of Intersection	Count the points of intersection of two or more lines (0 to 5 intersection points).
GE501	SMMA_ LO_00634	Similarity and Congruence	Determine if a Figure is Divided into Congruent Parts	Determine whether two to six segments divide a figure into congruent parts.
GE570	SMMA_ LO_00647	Symmetry	Draw Using Symmetry	Complete a symmetrical drawing.
GE575	SMMA_ LO_01773	Symmetry	Identify Lines of Symmetry	Identify the shape with a given number of lines of symmetry.
GE580	SMMA_ LO_00648	Transformations	Identify Reflections (Flips)	Identify a set of geometric figures that show a reflection (flip).

Grade 5		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE560	SMMA_ LO_00652	Attributes of Three-Dimensional Figures	Identify Bases, Edges, Faces, and Vertices of Three-Dimensional Figures	Complete sentences about bases, faces, edges, and vertices of geometric solids.
GE550	SMMA_ LO_00643	Attributes of Three-Dimensional Figures	Identify Bases, Edges, Faces, and Vertices of Three-Dimensional Figures	Count the vertices, edges, or faces of a prism or pyramid.
ME543	SMMA_ LO_02260	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rectangular Prism	Solve real-world problems involving the volume of right rectangular prisms.

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# Measurement

Grade 5		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME530	SMMA_ LO_00790	Measurement of Two-Dimensional Figures	Determine Perimeter Using Metric Units	Find the perimeter of a polygon (decimal numbers, metric units).
ME535	SMMA_ LO_00810	Measurement of Two-Dimensional Figures	Calculate Area Using Metric Units	Find the area of a rectangle using a formula.
ME520	SMMA_ LO_00808	Measurement of Two-Dimensional Figures	Calculate the Area of an Irregular Figure	Estimate the area of a figure on a grid (3 to 11 square units).
ME580	SMMA_ LO_00821	Measurement of Two-Dimensional Figures	Determine Perimeter Using Customary Units	Given the lengths of all sides, find the perimeter of a rectangle.
ME595	SMMA_ LO_00823	Measurement of Two-Dimensional Figures	Identify and Compare Areas	Identify rectangles that have equal areas, but different dimensions.

Grade 5		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
WP540	SMMA_ LO_01613	Time	Determine Elapsed Time on an Analog Clock	Given the ending time and the elapsed time, find the starting time.
AP510	SMMA_ LO_01730	Units of Measure	Choose the Appropriate Customary Unit of Weight and Mass	Identify the appropriate unit of weight.
ME545	SMMA_ LO_00814	Units of Measure	Convert between Linear Metric Units	Convert metric units of length (mm, cm, m, and km; whole numbers).
ME575	SMMA_ LO_00820	Units of Measure	Determine Equivalent Metric Units	Compare unlike metric units and identify the correct statement (mm, cm, m, km; mL, L; mg, g, kg).
AP590	SMMA_ LO_00172	Units of Measure	Determine Equivalent Metric Units	Add metric measurements with unlike units and express the sum in terms of the larger unit.
AP540	SMMA_ LO_00168	Units of Measure	Determine Equivalent Metric Units	Add metric measurements with unlike units and express the sum in terms of the smaller unit.

Grade 5		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME515	SMMA_ LO_00807	Units of Measure	Identify the Reasonable Mass for an Object in Metric Units	Identify the reasonable mass for an object (grams, kilograms, and milligrams).
ME590	SMMA_ LO_00822	Units of Measure	Measure Length in Customary or Metric Units	Measure the length of a bar to the nearest 1/4 inch or 0.5 cm.
ME540	SMMA_ LO_00811	Units of Measure	Metric Units of Capacity and Volume	Identify the reasonable capacity of an object (milliliters and liters).
AP530	SMMA_ LO_01323	Units of Measure	Metric Units of Linear Measure	Measure topsoil in a soil sample; calculate how long it took to form.
ME510	SMMA_ LO_00796	Units of Measure	Determine Equivalent Customary Units of Capacity	Convert customary units of capacity (cups, pints, quarts, and gallons).
ME505	SMMA_ LO_00801	Units of Measure	Customary Units of Weight and Mass	Compare unlike customary units of weight and identify the correct statement (ounces and pounds).

Grade 5		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME512	SMMA_ LO_00797	Units of Measure	Customary Units of Weight and Mass	Convert between customary units of weight (ounces and pounds).
ME500	SMMA_ LO_00791	Units of Measure	Determine Equivalent Customary Units of Length	Convert customary units of length (inches, feet, and yards).
ME555	SMMA_ LO_02042	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rectangular Prism	Find the volume of a prism by packing the prism with unit cubes.
ME560	SMMA_ LO_02043	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rectangular Prism	Compute the volume of right rectangular prisms using formulas.
AP595	SMMA_ LO_00174	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rectangular Prism	Determine the volume of a box given the height, width, and length (60 to 480 customary or metric cubic units).

Grade 5		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME565	SMMA_ LO_02044	Measurement of Three-Dimen- sional Figures	Calculate the Volume of an Irregular Figure	Find the volume of a three-dimensional figure by decom- posing that figure into two right rectangular prisms and then adding those prisms' volumes.
ME550	SMMA_ LO_02041	Measurement of Three-Dimen- sional Figures	Choose the Appropriate Measuring Instruments	Identify a unit cube and what attribute it is used to measure.

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## Number Sense and Operations

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP550	SMMA_ LO_01622	Estimation	Estimate Products/Quotients	Estimate the product by rounding each factor (a two-digit number by a three-digit number).



Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC585	SMMA_ LO_00238	Estimation	Estimate Products/Quotients	Identify the best estimate for a quotient (decimal divided by a whole number).
MU590	SMMA_ LO_01099	Estimation	Estimate Products/Quotients	Estimate the product of two factors (11 x 11 to 999 x 999).
DC570	SMMA_ LO_00231	Estimation	Estimate Sum, Difference, Product, or Quotient	Identify the best estimate of a sum, difference, or product.
PS525	SMMA_ LO_01109	Estimation	Estimate Sum, Difference, Product, or Quotient	Estimate the sum, difference, product or quotient to solve a problem in context (round to the nearest thousand).
NC575	SMMA_ LO_01278	Estimation	Estimate Products/Quotients Using Money Amounts	Identify the most reasonable answer to a multiplication problem involving money.
NC585	SMMA_ LO_01279	Estimation	Estimate Products/Quotients Using Money Amounts	Identify the most reasonable answer to a division problem involving money.
DC596	SMMA_ LO_02253	Estimation	Determine Reasonableness	Estimate multiplication or division of multi-digit numbers with decimals to the hundredths.

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC505	SMMA_ LO_00224	Number Sense	Determine Equivalent Fractions and Decimals	Match a decimal number to an equivalent fraction (tenths to thousandths).
DC557	SMMA_ LO_00225	Number Sense	Compare Decimals to Thousandths	Compare decimal numbers (to thousandths).
FR518	SMMA_ LO_00457	Number Sense	Determine Equivalent Fractions	Find an equivalent fraction of a simplified fraction (simplified fractions $\frac{1}{2}$ to $\frac{8}{9}$ ).
FR504	SMMA_ LO_01791	Number Sense	Determine Equivalent Fractions	Generate a table of equivalent fractions for a fraction in simplest form.
FR521	SMMA_ LO_01792	Number Sense	Determine Equivalent Fractions	Generate a table of equivalent fractions for a fraction not in simplest form.
FR516	SMMA_ LO_01793	Number Sense	Determine Equivalent Fractions	Identify the fraction equivalent to the given fraction.
FR523	SMMA_ LO_00458	Number Sense	Determine Equivalent Fractions	Find three equivalent fractions (simplified fractions $\frac{1}{2}$ to $\frac{8}{9}$ ).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
ME525	SMMA_ LO_00809	Number Sense	Determine Equivalent Fractions and Decimals Using Money Amounts	Identify the fraction of a dollar a coin is worth (penny to half-dollar).
DC577	SMMA_ LO_00236	Number Sense	Order Decimals to Thousandths	Order three decimals from least to greatest (to thousandths).
FR502	SMMA_ LO_00452	Number Sense	Simplify Fractions	Determine if a fraction can be divided to find an equivalent fraction (equivalent fractions $\frac{1}{2}$ to $\frac{3}{4}$ ).
FR509	SMMA_ LO_00454	Number Sense	Simplify Fractions	Determine if a fraction can be simplified; simplify if possible (simplified fractions $\frac{1}{2}$ to $\frac{7}{8}$ ).
FR514	SMMA_ LO_00456	Number Sense	Simplify Fractions	Determine if a fraction can be divided to find an equivalent fraction (equivalent simplified fractions $\frac{1}{2}$ to $\frac{7}{8}$ ).
FR507	SMMA_ LO_00453	Number Sense	Simplify Fractions	Find the equivalent fraction ( $\frac{1}{2}$ to $\frac{7}{8}$ ).
FR511	SMMA_ LO_00455	Number Sense	Simplify Fractions	Write a fraction in simplest form (simplified fractions $\frac{1}{2}$ to $\frac{7}{8}$ ).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
ME570	SMMA_ LO_00817	Number Sense	Solve Fraction Problems in Context	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).
PS526	SMMA_ LO_01285	Number Sense	Solve Fraction Problems in Context	Determine the sale price of an item when the price is reduced by one-half, one-third, or one-fourth.
FR528	SMMA_ LO_01706	Number Sense	Determine Equivalent Fractions for One-Half	Use addition to find an equivalent fraction for $\frac{1}{2}$ .
NC525	SMMA_ LO_02046	Number Sense	Multiply Using Basic Math Facts	Explain patterns in the number of zeroes of the product and in the placement of the decimal point when multiplying a number by powers of ten.
NC550	SMMA_ LO_01103	Number Sense	Order Decimals	Identify a list of decimal numbers ordered from least to greatest.
NC530	SMMA_ LO_01079	Number Theory	Identify Odd/Even Numbers	Identify if a sum or difference of two numbers is odd or even (one- or two-digit numbers).
NC550	SMMA_ LO_01086	Number Theory	Identify Odd/Even Numbers	Identify if the sum, difference, or product of two numbers is even or odd.

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR500	SMMA_LO_00493	Number Theory	Least Common Denominator	Determine the common denominator of two fractions.
FR525	SMMA_LO_00494	Number Theory	Least Common Denominator	Determine the equivalent fractions using the least common denominator of two given fractions.
NC500	SMMA_LO_01091	Number Theory	Order of Operations with Grouping Symbols	Evaluate an expression using the order of operations.
DV500	SMMA_LO_00291	Operations with Numbers	Divide Multiples of 10	Divide (combinations 2 x 20 to 5 x 90, three-digit dividend, one or two-digit divisor, noremainder).
DV525	SMMA_LO_00293	Operations with Numbers	Divide Multiples of 10	Divide (combinations 6 x 20 to 9 x 90).
WP560	SMMA_LO_01623	Operations with Numbers	Add Mixed Numbers with Like Denominators	Determine the number of dollar bills needed to buy three to five items).
AD575	SMMA_LO_00097	Operations with Numbers	Add Two-Digit/Three-Digit Whole Numbers with Regrouping	Add three addends (student choice, a two-digit and 2 three-digit addends, sums 211 to 2097, regrouping in all places).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP525	SMMA_ LO_01608	Operations with Numbers	Add/Subtract Money	Solve a problem in context that involves adding three amounts expressed as dollars and cents.
WP510	SMMA_ LO_01611	Operations with Numbers	Add/Subtract Money	Find the total value of a group of quarters, dimes, nickels, and pennies (sums to \$1.65).
ME599	SMMA_ LO_02259	Operations with Numbers	Add/Subtract Money	Solve multi-step real-world problems involving money including decimals.
DV550	SMMA_ LO_00299	Operations with Numbers	Divide Whole Numbers with Remainders Using Long Division	Multiply multiples of 10 using mental math (20 x 20 to 90 x 90).
DC540	SMMA_ LO_00219	Operations with Numbers	Multiply Decimals	Find the missing factor and quotient in two related number sentences (products $0.2 \times 2$ to $0.9 \times 5$ ).
DC555	SMMA_ LO_00223	Operations with Numbers	Multiply Decimals	Multiply two decimals or multiply a decimal by a whole number (tenths to hundredths).
DC575	SMMA_ LO_00235	Operations with Numbers	Multiply Decimals	Multiply decimals by 10, 100, or 1000.

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC595	SMMA_ LO_00250	Operations with Numbers	Multiply Decimals	Identify the probable error in a multiplication calculation with decimals.
DC550	SMMA_ LO_00222	Operations with Numbers	Multiply Decimals	Identify the location of the decimal point of the product of two decimals (factors, tenths to hundredths).
DC572	SMMA_ LO_00232	Operations with Numbers	Multiply Decimals Horizontally to Hundredths	Multiply decimals displayed horizontally (0.2 x 0.6 to 0.9 x 0.12).
MU520	SMMA_ LO_01078	Operations with Numbers	Multiply Multiples of 10	Multiply one- to five-digit whole numbers by powers of ten (10 to 100,000).
MU500	SMMA_ LO_00911	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (multiples of 10 or 100).
MU550	SMMA_ LO_00902	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (student choice, products 100 x 20 to 990 x 90, multiples of 10).
MU560	SMMA_ LO_00904	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (student choice, products 101 x 20 to 999 x 90, multiples of 10).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU555	SMMA_ LO_00905	Operations with Numbers	Multiply Multiples of 10	Multiply whole numbers (student choice, products 100 x 21 to 990 x 90, multiples of 10).
MU525	SMMA_ LO_00899	Operations with Numbers	Multiply Two-Digit Whole Num- bers	Multiply whole numbers (student choice, products 11 x 11 to 15 x 99).
MU570	SMMA_ LO_00900	Operations with Numbers	Multiply Two-Digit Whole Num- bers	Multiply whole numbers (student choice, products 10,000 x 2 to 99,999 x 9).
MU535	SMMA_ LO_00901	Operations with Numbers	Multiply Two-Digit Whole Num- bers	Multiply a two-digit number by a two-digit number (student choice, products 16 x 11 to 19 x 99).
MU530	SMMA_ LO_00903	Operations with Numbers	Multiply Two-Digit Whole Num- bers	Multiply whole numbers (student choice, products 21 x 11 to 99 x 99).
DC545	SMMA_ LO_00221	Operations with Numbers	Multiply/Divide Decimals by Whole Numbers	Multiply a decimal and a whole number displayed hori- zontally (0.02 x 2 to 0.09 x 5).
DC580	SMMA_ LO_00237	Operations with Numbers	Multiply/Divide Decimals to Determine Missing Factor	Divide a decimal by a decimal (horizontal division; dividends to tenths).



Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP575	SMMA_ LO_01617	Operations with Numbers	Solve Division Problems in Context	Interpret the quotient and remainder of a division problem in context (three-digit dividends).
NC597	SMMA_ LO_02247	Operations with Numbers	Solve Division Problems in Context	Solve multi-step real-world problems using all 4 oper- ations where remainders are interpreted within the con- text.
PS500	SMMA_ LO_01283	Operations with Numbers	Solve Multiplication/Division Problems with Missing/Extra Information	Identify the missing information needed to solve a mul- tiplication problem in context; then solve the problem.
AP525	SMMA_ LO_00159	Operations with Numbers	Subtract Decimals with Regrouping to Tenths	Subtract metric length or weight measurements expressed as decimals (to tenths, difference 1.2 to 8.9, regrouping).
SU575	SMMA_ LO_01504	Operations with Numbers	Subtract Four-Digit Numbers with Regrouping	Find the difference of two whole numbers (student choice, four-digit numbers, regrouping from tens, hundreds, and thousands places).
WP500	SMMA_ LO_01609	Operations with Numbers	Subtract Money Amounts	Find the change from one dollar for two to four items (each 10, 15, or 20 cents).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU525	SMMA_ LO_01499	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hun- dreds/Thousands Place	Subtract a three-digit number from a four-digit number (student choice, regrouping from tens, hundreds, and thousands places).
SU550	SMMA_ LO_01500	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hun- dreds/Thousands Place	Subtract a three-digit number from a four-digit number (student choice, regrouping from tens, hundreds, and thousands places).
ME585	SMMA_ LO_02049	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	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.
AP505	SMMA_ LO_01733	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	Identify equivalent arrays with different factors (two-digit factors).
AP520	SMMA_ LO_01734	Operations with Numbers	Use Conceptual Models to Understand Multiplication: Arrays/Area Model	Use an area model to solve a multiplication problem (two- digit factors).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR551	SMMA_ LO_01707	Operations with Numbers	Estimate Fraction Differences	Estimate the difference of two fractions.
AD525	SMMA_ LO_00093	Operations with Numbers	Add Three-Digit Whole Num- bers with Regrouping	Add two addends (student choice, three-digit addends, sums 1000 to 1989, regrouping).
AD550	SMMA_ LO_00096	Operations with Numbers	Add Three-Digit Whole Num- bers with Regrouping	Add two addends (student choice, three-digit addends, sums 1000 to 1998, regrouping in all places).
AD500	SMMA_ LO_00077	Operations with Numbers	Add Three-Digit Whole Num- bers with Regrouping	Add two addends (student choice, three-digit addends, sums 1000 to 1899, regrouping hundreds).
DC515	SMMA_ LO_00208	Operations with Numbers	Subtract Money Amounts with Regrouping	Subtract money amounts (sums less than \$17.00, regrouping).
DC530	SMMA_ LO_00214	Operations with Numbers	Subtract Money Amounts with Regrouping	Subtract money amounts (sums less than \$50.00, regrouping).
DC512	SMMA_ LO_00207	Operations with Numbers	Subtract Decimals to Hun- dredths	Subtract decimals numbers (minuends and subtrahends 0.01 to 9.99).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC510	SMMA_ LO_00206	Operations with Numbers	Add Decimals to Hundredths	Add decimals using addition facts (sums 0.02-0.99).
DC522	SMMA_ LO_00211	Operations with Numbers	Add Decimals with Regrouping	Align the decimal numbers in a vertical addition problem; then solve (hundredths, regrouping).
DC520	SMMA_ LO_00210	Operations with Numbers	Add and/or Subtract Decimals	Add or subtract decimals using mental math (sums less than 1.00, with or without regrouping).
DC535	SMMA_ LO_00217	Operations with Numbers	Add Decimals to Tenths	Add decimals numbers using mental math (sums 1.0 to 99.8, regrouping).
DC525	SMMA_ LO_00212	Operations with Numbers	Subtract Decimals Vertically with Regrouping to Hundredths	Align the decimal numbers in a vertical subtraction problem; then solve (hundredths, regrouping).
DC590	SMMA_ LO_00242	Operations with Numbers	Relate Decimal to Model	Match a decimal number to a model (thousandths).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU500	SMMA_ LO_01497	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hun- dreds Place	Subtract a three-digit number from a four-digit number (regrouping from the tens and hundreds places).
DV575	SMMA_ LO_00315	Operations with Numbers	Determine Estimate for Long Division Problem	Choose the best estimate for a long division problem (three-digit dividends, two-digit divisors).
FR595	SMMA_ LO_02052	Operations with Numbers	Divide Fractions by Whole Numbers	Model the division of a unit fraction by a nonzero whole number, and compute the quotient.
FR570	SMMA_ LO_00469	Operations with Numbers	Multiply Fractions	Multiply fractions; no simplifying.
FR572	SMMA_ LO_00475	Operations with Numbers	Multiply Fractions	Multiply fractions ( $\frac{1}{2}$ to $\frac{9}{10}$ ).
FR579	SMMA_ LO_00476	Operations with Numbers	Multiply Fractions	Multiply fractions; simplify first.
FR581	SMMA_ LO_00498	Operations with Numbers	Multiply Fractions	Find a fractional part of a fraction.

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR584	SMMA_ LO_02054	Operations with Numbers	Multiply Fractions	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.
FR575	SMMA_ LO_00477	Operations with Numbers	Multiply Fractions and Whole Numbers	Multiply a fraction and a whole number; simplify.
FR577	SMMA_ LO_00478	Operations with Numbers	Multiply Fractions and Whole Numbers	Multiply a fraction and a whole number; simplify first.
FR567	SMMA_ LO_00470	Operations with Numbers	Multiply Fractions and Whole Numbers	Multiply a whole number by a proper fraction; no simplifying.
FR565	SMMA_ LO_02048	Operations with Numbers	Multiply Fractions and Whole Numbers	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.
FR591	SMMA_ LO_02047	Operations with Numbers	Solve Fraction Problems in Context	Model a division word problem that results in a rational quotient; then express the word problem with an equation.

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC560	SMMA_ LO_02050	Operations with Numbers	Compare Products Using Symbols	Determine whether multiplying a number by a factor results in scaling the number up or down.
FR593	SMMA_ LO_02051	Operations with Numbers	Compare Products Using Symbols	Determine whether multiplying a number by a factor results in scaling the number up or down.
DC587	SMMA_ LO_02193	Operations with Numbers	Use Conceptual Models to Understand Division	Represent quotients of decimals using objects and pictorial models, including area models.
FR539	SMMA_ LO_00464	Operations with Numbers	Subtraction Fractions from 2	Subtract a fraction from 1; simplify (halves to sixteenths).
FR530	SMMA_ LO_00465	Operations with Numbers	Add Fractions with Unlike Denominators	Add fractions; no simplifying (unlike denominators).
FR532	SMMA_ LO_00467	Operations with Numbers	Add Fractions with Unlike Denominators	Add fractions; no simplifying (unlike denominators).
FR535	SMMA_ LO_00471	Operations with Numbers	Add Fractions with Unlike Denominators	Add fractions (unlike denominators).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR537	SMMA_ LO_00473	Operations with Numbers	Add Fractions with Unlike Denominators	Add fractions; simplify if necessary (unlike denominators).
FR542	SMMA_ LO_00466	Operations with Numbers	Subtract Fractions with Unlike Denominators	Subtract fractions; no simplifying (unlike denominators).
FR544	SMMA_ LO_00468	Operations with Numbers	Subtract Fractions with Unlike Denominators	Subtract fractions; no simplifying (unlike denominators).
FR546	SMMA_ LO_00472	Operations with Numbers	Subtract Fractions with Unlike Denominators	Subtract fractions; simplify if necessary (unlike denominators).
FR549	SMMA_ LO_00474	Operations with Numbers	Subtract Fractions with Unlike Denominators	Subtract fractions; (unlike denominators); rename improper fraction.
FR553	SMMA_ LO_00499	Operations with Numbers	Add Mixed Numbers with Unlike Denominators	Add mixed numbers (unlike denominators).
FR556	SMMA_ LO_00504	Operations with Numbers	Add Mixed Numbers with Unlike Denominators	Add mixed numbers; simplify if necessary (unlike denominators).



Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR558	SMMA_ LO_00505	Operations with Numbers	Subtract Mixed Numbers with Unlike Denominators	Subtract mixed numbers (unlike denominators).
FR563	SMMA_ LO_00510	Operations with Numbers	Subtract Mixed Numbers with Unlike Denominators	Subtract mixed numbers within a context; simplify if necessary (unlike denominators).
FR550	SMMA_ LO_00500	Operations with Numbers	Subtract Mixed Numbers with Unlike Denominators	Subtract mixed numbers (unlike denominators).
FR588	SMMA_ LO_00501	Operations with Numbers	Multiply Mixed Numbers	Multiply mixed numbers; simplify if necessary.
NC595	SMMA_ LO_00835	Operations with Numbers	Multiply Mixed Numbers and Fractions	Find the fractional part of a recipe (multiply a fraction and a mixed number).
MU572	SMMA_ LO_00906	Operations with Numbers	Multiply Four-Digit by Two- Digit Numbers	Multiply (student choice, products 1000 x 20 to 9999 x 90, multiples of 10).
MU580	SMMA_ LO_00909	Operations with Numbers	Multiply Four-Digit by Two- Digit Numbers	Multiply whole numbers (student choice, products 1000 x 21 to 9999 x 99).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU565	SMMA_ LO_00907	Operations with Numbers	Multiply Three-Digit by Two-Digit Whole Numbers	Multiply whole numbers (student choice, products 101 x 21 to 999 x 99).
MU575	SMMA_ LO_00908	Operations with Numbers	Multiply Five-Digit by Two-Digit Numbers	Multiply by a multiple of 10 (student choice, 10,000 x 20 to 99,999 x 90).
MU585	SMMA_ LO_00910	Operations with Numbers	Multiply Five-Digit by Two-Digit Numbers	Multiply whole numbers (student choice, 10,000 x 21 to 99,999 x 99).
NC535	SMMA_ LO_01118	Operations with Numbers	Compare Decimals	Find a decimal number that is either greater than or less than two decimal numbers.
FR598	SMMA_ LO_01787	Operations with Numbers	Divide Whole Numbers by Fractions	Divide a whole number by a fraction; simplify if necessary.
MU510	SMMA_ LO_02192	Operations with Numbers	Multiply Basic Math Facts	Determine products of a number and 10 or 100.
NC510	SMMA_ LO_01089	Place Value	Determine Decimal Numbers Using Place-Value Charts	Enter a decimal number in a place-value chart (tenths to thousandths).

Grade 5		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC500	SMMA_ LO_00204	Place Value	Relate Word Name to Decimal Number	Match the word name with the decimal number (0.10 to 9.99).
DC560	SMMA_ LO_00227	Place Value	Relate Word Name to Decimal Number	Match a decimal number to its word me (to thousandths).
DC565	SMMA_ LO_00230	Place Value	Round Decimals to Hundredths	Round a decimal to the nearest tenth, hundredth, or whole number.
NC520	SMMA_ LO_02045	Place Value	Determine Place Value of Digits	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.
NC501	SMMA_ LO_02256	Written Equations	Determine Whether an Equation is True or False	Determine which equations involving any of the four operations are true.

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# Patterns, Algebra, and Functions

Grade 5		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ550	SMMA_ LO_00358	Functions and Relations	Describe the Rule in a Relation or Function	Determine the output of one-function machine, given an input and sample inputs and outputs (combinations 2 x 2 to 9 x 9).
PS550	SMMA_ LO_01723	Functions and Relations	Describe the Rule in a Relation or Function	Identify the one-step rule in the relation or function (multiplication and division).
NC552	SMMA_ LO_02258	Functions and Relations	Generate a Table Given a Rule	Record inputs and outputs in a table based on a given rule.
EQ525	SMMA_ LO_00354	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in a $a \cdot b = c$ .
EQ500	SMMA_ LO_00353	Open Sentences	Find the Product to Identify the Variable	Solve for c in a $x \cdot b = c$ (products 6 x 2 to 9 x 12).
AP550	SMMA_ LO_01724	Patterns	Generate a Table Given a Rule	Generate a table of values given a rule.

Grade 5		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS560	SMMA_ LO_02197	Patterns	Generate a Table Given a Rule	Generate two numerical patterns using two given rules and identify apparent relationships between corresponding terms.
DC542	SMMA_ LO_00220	Patterns	Identify the Decimal That Completes the Pattern	Find the missing decimal number on a number line; then count by multiples of tenths to find the product.
DC532	SMMA_ LO_00253	Patterns	Identify the Decimal That Completes the Pattern	Find the missing decimal number in a pattern (addition).
NC551	SMMA_ LO_02257	Patterns	Identify an Expression to Describe a Pattern	Identify the expression that represents the rule of a given numerical pattern.
PS575	SMMA_ LO_01293	Written Equations	Translate Written Phrases into Equations and Solve	Find the missing information needed to solve a problem; then solve.
EQ575	SMMA_ LO_02167	Written Expressions	Identify the Expression That Is a Translation of the Written Phrase	Identify the expression that is a translation of a written phrase.

Grade 5		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP596	SMMA_ LO_02255	Written Expressions	Identify the Expression That Is a Translation of the Written Phrase	Translate written mathematical descriptions into numerical expressions.
NC596	SMMA_ LO_02254	Multi-Step Equations	Solve Multi-Step Equations	Solve multi-step real-world problems using all 4 operations.

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## Speed Games (Fluency)

Grade 5		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG510	SMMA_SG_ 00510	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 30.

Grade 5		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG540	SMMA_SG_00540	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG550	SMMA_SG_00550	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG500	SMMA_SG_00500	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 30.
SG520	SMMA_SG_00520	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 30.
SG570	SMMA_SG_00570	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG580	SMMA_SG_00580	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG560	SMMA_SG_00560	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.

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## Probability and Discrete Mathematics

Grade 5		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR500	SMMA_LO_01737	Discrete Mathematics	Solve Route Problems	Determine the number of routes between two locations on a map.

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## Performance Tasks

Grade 5		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT964	SMMA_LO_02506	Problem Solving	1. Students will add and compare decimals.	Students apply operations on decimals to hundredths.



Grade 5		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT967	SMMA_LO_02507	Problem Solving	2. Solve problems involving fraction multiplication and scaling	Multiply fractions by fractions..
PT970	SMMA_LO_02508	Problem Solving	3. Calculate the volume of a rectangular prism	Calculate volume of figures with whole number dimensions.

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## Data Analysis

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
AP605	SMMA_LO_01327	Data Interpretation	Collect, Organize, and Analyze Data	Measure the amount of rainfall for the week; then complete the chart and determine the total amount of rainfall for the month.

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
AP642	SMMA_LO_01769	Data Interpretation	Construct a Bar Graph	Create a bar graph.
PR675	SMMA_LO_01199	Data Interpretation	Read and Interpret Box-and-Whiskers 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.
PR680	SMMA_LO_01201	Data Interpretation	Read and Interpret Box-and-Whiskers Plots	Identify box-and whiskers plot that matches a given set of data.
PR690	SMMA_LO_01202	Data Interpretation	Read and Interpret Box-and-Whiskers Plots	Identify the data set that matches the data represented in a given box-and-whiskers plot.
AP640	SMMA_LO_01764	Data Interpretation	Read and Interpret Line Graphs	Read and interpret a line plot.
AP680	SMMA_LO_01333	Data Interpretation	Read and Interpret Tables and Charts	Determine the number of calories in multiple servings given data in a chart.
PR601	SMMA_LO_02172	Data Interpretation	Recognize a Statistical Question	Recognize statistical questions in which data with variability can be collected.

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR602	SMMA_ LO_02218	Data Interpretation	Identify Variation in Samples	Compare estimates and variation in two samples.
PR607	SMMA_ LO_02201	Data Interpretation	Identify the Data Collection Process and Units of Measurement	Identify the data collection process and units of measurement.
AP610	SMMA_ LO_00151	Measures of Center and Spread	Determine the Mean of a Data Set	Find the average (mean) of 3 numbers.
PR630	SMMA_ LO_01727	Measures of Center and Spread	Determine the Mean of a Data Set	Determine the mean of a data set.
AP690	SMMA_ LO_00179	Measures of Center and Spread	Determine the Mean of a Data Set	Determine a student's grade point average based on five grades.

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
ME675	SMMA_ LO_00836	Measures of Center and Spread	Determine the Mean of a Data Set	Determine the average (mean) of a data set of three to five customary weights or metric masses.
PR695	SMMA_ LO_01210	Measures of Center and Spread	Determine the Range, Mean, Median, and Mode of a Data Set	Determine the average (mean), median, mode, and range.
PR640	SMMA_ LO_01726	Measures of Center and Spread	Determine the Median of a Data Set	Determine the median of a data set.
PR645	SMMA_ LO_01768	Measures of Center and Spread	Determine the Median of a Data Set	Determine the median of a set of data.
PR605	SMMA_ LO_01168	Measures of Center and Spread	Determine the Median of a Data Set with an Even Number of Items	Identify the median of a data set with an odd number of items.

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR610	SMMA_ LO_01169	Measures of Center and Spread	Determine the Median of a Data Set with an Even Number of Items	Identify the median of a data set with an even number of items and the two middle values are equal.
PR620	SMMA_ LO_01170	Measures of Center and Spread	Determine the Median of a Data Set with an Even Number of Items	Identify the median of a data set with an even number of items and the two middle values are not equal.
PR650	SMMA_ LO_01719	Measures of Center and Spread	Determine the Mode of a Data Set	Determine the mode of a data set.
PR600	SMMA_ LO_01166	Measures of Center and Spread	Determine the Range of a Data Set	Find the range of a set of data.
PR625	SMMA_ LO_01176	Measures of Center and Spread	Determine the Range of a Data Set	Determine the range of a set of data represented in a line graph.

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR660	SMMA_ LO_01766	Measures of Center and Spread	Determine the Range of a Data Set	Determine the range of a set of data.
PR603	SMMA_ LO_02173	Measures of Center and Spread	Determine the Mean, Median, MAD, or IQR of a Data Set	Determine the mean, median, MAD, or IQR of a data set.
PR604	SMMA_ LO_02175	Measures of Center and Spread	Determine the Range, Mean, Median of a Data Set in Context	Determine the range, mean, or median of a data set in context.
PR606	SMMA_ LO_02200	Measures of Center and Spread	Determine the Number of Observations	Determine the number of observations in a data set.
PR662	SMMA_ LO_02202	Measures of Center and Spread	Use the Distribution of Data to Determine the Appropriate Measure of Center	Identify the measure of center that best summarizes the data in a graph.

Grade 6		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
AP625	SMMA_ LO_01314	Graph, Chart, and Table Con- struction	Read and Interpret Tables and Charts	Read and interpret data in a table to determine the wind chill temperature.
AP650	SMMA_ LO_01315	Graph, Chart, and Table Inter- pretation	Read and Interpret Tables and Charts	Read and interpret data in a table to determine the time it would take for skin to freeze.
PR691	SMMA_ LO_02265	Graph, Chart, and Table Inter- pretation	Read and Interpret His- tograms	Interpret properties of a given histogram with a real-world context.

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# Geometry

Grade 6		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE675	SMMA_LO_02138	Attributes of Three-Dimensional Figures	Identify Figures Based on Their Attributes	Classify and sort three-dimensional solids based on attributes using formal geometric language.
GE660	SMMA_LO_00664	Attributes of Three-Dimensional Figures	Identify Bases, Edges, Faces, and Vertices of Three-Dimensional Figures	Identify the set of faces for a geometric solid.
GE610	SMMA_LO_01772	Attributes of Three-Dimensional Figures	Identify Nets for Three-Dimensional Figures	Identify the net that forms a three-dimensional solid.
GE625	SMMA_LO_00655	Attributes of Two-Dimensional Figures	Identify Acute, Obtuse and Right Triangles	Identify acute, obtuse, and right triangles.
GE650	SMMA_LO_01774	Attributes of Two-Dimensional Figures	Identify Acute, Obtuse and Right Triangles	Identify all triangles of a particular class (acute, right, or obtuse).



Grade 6		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE640	SMMA_LO_00659	Attributes of Two-Dimensional Figures	Identify and/or Classify Quadrilaterals	Identify the quadrilaterals that are trapezoids or rhombuses.
GE630	SMMA_LO_00658	Attributes of Two-Dimensional Figures	Identify Equilateral, Isosceles, and Scalene Triangles	Identify equilateral, isosceles, and scalene triangles.
GE600	SMMA_LO_00651	Attributes of Two-Dimensional Figures	Identify Regular Polygons	Identify the regular polygons.
GE620	SMMA_LO_00653	Circle Geometry	Identify the Center, Radius, Chord, or Diameter of a Circle	Identify a part of a circle (center, radius, chord, or diameter).
GE680	SMMA_LO_02108	Coordinate Geometry	Identify Reflections (Flips)	Given two points, describe how the points are related: reflected across the x-axis, reflected across the y-axis, or reflected across both axes.

Grade 6		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE690	SMMA_ LO_00665	Transformations	Classify the Transformation	Identify a reflection, a rotation, and a translation of a geometric figure.
GE685	SMMA_ LO_02170	Graph on the Coordinate Plane	Points in the Coordinate Plane	Draw polygons in the coordinate plane and find the length of a side.
GE678	SMMA_ LO_02169	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rectangular Prism	Find the volume of a right rectangular prism with fractional edge lengths.
GE655	SMMA_ LO_02168	Measurement of Two-Dimensional Figures	Calculate Area Using Customary or Metric Units	Decompose Shapes into triangles and rectangles to find the area.

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# Measurement

Grade 6		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME650	SMMA_ LO_00833	Measurement of Three-Dimensional Figures	Calculate the Volume of a Cube	Find the volume of a rectangular solid by counting cubes.
AP622	SMMA_ LO_01864	Units of Measure	Choose the Appropriate Customary Unit of Capacity or Volume	Choose the appropriate unit of capacity (ounce, cup, pint, quart, and gallon).
ME625	SMMA_ LO_00829	Units of Measure	Determine Volume Using Non-standard Units	Find the volume of a rectangular solid by counting cubes.
PS650	SMMA_ LO_02117	Units of Measure	Convert Measurement Units	Convert measurement units either by making a table or by multiplying by a unit rate.
AP660	SMMA_ LO_00169	Measurement of Two-Dimensional Figures	Calculate the Perimeter of a Simple, Closed Figure	Find the perimeter of a rectangle (24 to 48 customary or metric units).
ME600	SMMA_ LO_00826	Measurement of Two-Dimensional Figures	Determine if a Problem Relates to Perimeter, Area, or Volume	Determine if the perimeter, area, or volume is needed to solve the problem.

Grade 6		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
NC602	SMMA_ LO_00804	Temperature	Read the Temperature on a Thermometer	Read the temperature on a thermometer to nearest degree (-10 to 10 degrees).
NC600	SMMA_ LO_00768	Temperature	Read a Thermometer in Degrees Fahrenheit	Read a thermometer to the nearest 10 degrees (Fahrenheit).

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## Number Sense and Operations

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DV650	SMMA_ LO_00301	Estimation	Estimate Products/Quotients	Estimate the quotient in a long division problem (three-digit dividend, two-digit divisor, remainder).
DC680	SMMA_ LO_00254	Number Sense	Compare Decimals Using Symbols	Identify the symbol (< or >) needed to complete the inequality.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC690	SMMA_ LO_01102	Number Sense	Compare Integers	Determine the least or greatest integer (-10 to 10).
NC630	SMMA_ LO_01094	Number Sense	Determine Equivalent Fractions and Decimals	Identify decimals or fractions that are not equivalent to a given decimal or fraction.
DC695	SMMA_ LO_00257	Number Sense	Determine Equivalent Fractions and Decimals	Identify the division problem that can be used to rewrite a fraction as a decimal.
WP610	SMMA_ LO_02114	Number Sense	Ratios and Proportions	Identify two unit rates for a given word problem.
AP645	SMMA_ LO_02115	Number Sense	Ratios and Proportions	Find missing values in a table that represents a proportional relationship, and plot the pairs of values on the coordinate plane.
PS640	SMMA_ LO_02116	Number Sense	Ratios and Proportions	Complete a comparison statement based on the ratios in two tables.
NC618	SMMA_ LO_01825	Number Sense	Ratios and Proportions	Write a ratio in three different forms.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC620	SMMA_ LO_00256	Number Sense	Use Base-Ten Models to Represent Fractions, Decimals, and Percents	Determine the decimal and percent that is represented by a model (base-ten blocks, hundredths).
AP600	SMMA_ LO_01714	Number Sense	Convert between Percents, Fractions, and Decimals	Express a fraction as a percent (denominator is 100).
NC610	SMMA_ LO_01712	Number Sense	Ratios	Identify the ratio.
PS610	SMMA_ LO_01284	Number Sense	Solve Ratios/Proportions in Measurement Context	Solve a proportion problem in context.
DC685	SMMA_ LO_00255	Number Sense	Determine Equivalent Mixed Numbers and Decimals	Find an equivalent mixed number for a decimal (tenths to ten thousandths).
NC645	SMMA_ LO_01114	Number Sense	Compare Fractions, Decimals, and Percents	Identify equivalent representations of numbers.
WP695	SMMA_ LO_02109	Number Sense	Compare Numbers	Compare rational numbers in real-world contexts.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AP677	SMMA_ LO_02110	Number Sense	Compare Numbers	Complete statements of order for rational numbers in real-world contexts.
AP675	SMMA_ LO_02066	Number Sense	Use Integers to Represent Quantities	Use positive and negative numbers together to represent quantities having opposite directions or values.
NC698	SMMA_ LO_02217	Number Sense	Relate Perfect Squares and Cubes to Area and Volume	Determine side lengths and areas in squares, and side lengths and volumes in cubes.
FR690	SMMA_ LO_00511	Number Sense	Determine Equivalent Expressions	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.
NC650	SMMA_ LO_00842	Number Sense	Solve Ratios/Proportion Problems Involving Time/Cost	Solve time and distance problems (whole numbers).
NC648	SMMA_ LO_01820	Number Sense	Determine Equivalent Fractions, Decimals, and Percents	Complete the equivalence table by expressing a decimal number as a fraction and a percent.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC667	SMMA_ LO_01821	Number Sense	Determine Equivalent Fractions, Decimals, and Percents	Complete the equivalence table by expressing a decimal number as a fraction and a percent (round answer to the nearest hundredth).
NC670	SMMA_ LO_01822	Number Sense	Determine Equivalent Fractions, Decimals, and Percents	Complete the equivalence table by expressing a fraction as a decimal number and a percent (round answer to the nearest hundredth).
NC695	SMMA_ LO_01823	Number Sense	Absolute Value	Identify absolute value as a distance from zero on a number line.
MU675	SMMA_ LO_02226	Number Sense	Use Distributive Property of Multiplication to Identify Equivalent Expressions	Use the distributive property to express a sum of two whole numbers.
NC691	SMMA_ LO_02262	Number Sense	Use Distributive Property of Multiplication to Identify Equivalent Expressions	Rewrite an expression as an equivalent expression using the distributive property.
NC657	SMMA_ LO_01096	Number Theory	Multiples	Identify the common multiples for two to three numbers (2 to 20).



Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC605	SMMA_ LO_01098	Number Theory	Prime Factorization	Give the value of a number (1 to 10) raised to a power (1 to 5).
NC608	SMMA_ LO_01100	Number Theory	Prime Factorization	Match expressions with repeated factors to numbers in exponential form to create equations.
NC652	SMMA_ LO_01087	Number Theory	Prime Factors	Using a factor tree, find the prime factors of a number (2 to 32).
NC655	SMMA_ LO_01088	Number Theory	Factors	Identify a common factor of two numbers (4 to 81).
NC660	SMMA_ LO_01108	Number Theory	Least Common Multiples	Given the prime factorization of two numbers, find the common multiple.
NC665	SMMA_ LO_01112	Number Theory	Least Common Multiples	Find the least common multiple of two or three numbers.
MU650	SMMA_ LO_02225	Number Theory	Least Common Multiples	Find the least common multiple of two whole numbers.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC662	SMMA_ LO_01110	Number Theory	Determine Greatest Common Factor	Find the greatest common factor for two to three numbers.
MU625	SMMA_ LO_02224	Number Theory	Determine Greatest Common Factor	Find the greatest common factor of two whole numbers.
AD675	SMMA_ LO_00127	Operations with Numbers	Evaluate Integer Expressions Using Distributive Property of Multiplication	Evaluate $-a(a + b)$ , where $9 < a < 19$ , $1 < b < 9$ .
WP665	SMMA_ LO_01624	Operations with Numbers	Add Mixed Numbers with Like Denominators	Add mixed numbers with like denominators in context; simplify if necessary.
DC655	SMMA_ LO_00246	Operations with Numbers	Determine Reasonableness of Quotient	Identify a reasonable answer for a division problem.
DC650	SMMA_ LO_00245	Operations with Numbers	Divide Decimals to Hundredths	Divide decimals ( $0.3 \times 0.3$ to $0.9 \times 0.09$ ).
DC675	SMMA_ LO_00251	Operations with Numbers	Divide Decimals to Tenths	Divide decimals ( $0 \times 2$ to $2 \times 5$ ).

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC660	SMMA_ LO_00247	Operations with Numbers	Divide Decimals Using Long Division	Move the decimal point in the divisor and dividend in a long division problem.
DC670	SMMA_ LO_00249	Operations with Numbers	Divide Decimals Using Long Division	Move the decimal point in the divisor and dividend in a long division problem; then find the quotient.
FR660	SMMA_ LO_01790	Operations with Numbers	Divide Mixed Numbers	Divide a mixed number by a mixed number; simplify if necessary.
FR600	SMMA_ LO_00492	Operations with Numbers	Divide Whole Numbers by Fractions	Divide a whole number by a fraction.
WP650	SMMA_ LO_02053	Operations with Numbers	Divide Whole Numbers by Fractions	Use models to solve real-world problems involving division of whole numbers by unit fractions.
WP660	SMMA_ LO_02156	Operations with Numbers	Divide Whole Numbers by Fractions	Use models to solve real-world problems involving division of unit fractions by nonzero whole numbers.
DV625	SMMA_ LO_00297	Operations with Numbers	Divide Whole Numbers with Remainders Using Long Division	Divide using the long division algorithm (three-digit dividend, one-digit divisor, remainder).

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DV640	SMMA_ LO_00298	Operations with Numbers	Divide Whole Numbers with Remainders Using Long Division	Divide using the long division algorithm (three-digit dividend, one-digit divisor, remainder).
DV615	SMMA_ LO_00295	Operations with Numbers	Divide Whole Numbers with Remainders Using Long Division	Divide using the long division algorithm (one-digit divisor, remainder).
DV690	SMMA_ LO_00304	Operations with Numbers	Divide Whole Numbers with Remainders Using Long Division	Divide using the long division algorithm (three-digit number, two-digit divisor, remainder).
DV610	SMMA_ LO_00296	Operations with Numbers	Divide Whole Numbers without Remainders Using Long Division	Divide using the long division algorithm (three-digit dividend, one-digit divisor, no remainder).
NC680	SMMA_ LO_00101	Operations with Numbers	Identify Integers Using a Number Line	Locate the missing integer on a number line (-3 to -12).
WP670	SMMA_ LO_01625	Operations with Numbers	Multiply and Divide Decimals in Context	Find the number of hours worked given the hourly rate and total earned.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC640	SMMA_ LO_00830	Operations with Numbers	Multiply and Divide Decimals in Context	Find the unit price of an item (products 2 x 6 to 25 x 32).
DC677	SMMA_ LO_00252	Operations with Numbers	Multiply Decimals	Multiply a whole number or a decimal by 0.1, 0.01, or 0.001.
MU600	SMMA_ LO_02223	Operations with Numbers	Multiply Decimals	Fluently multiply multi-digit decimals.
DC620	SMMA_ LO_00234	Operations with Numbers	Multiply Decimals to Hundred-Thousandths	Multiply decimals (to thousandths x hundredths).
DC645	SMMA_ LO_00244	Operations with Numbers	Multiply Decimals to Hundred-Thousandths	Multiply decimals (to ten-thousandths x ten-thousandths).
DC625	SMMA_ LO_00239	Operations with Numbers	Multiply/Divide Decimals by Whole Numbers	Divide a decimal by a whole number.
DC665	SMMA_ LO_00248	Operations with Numbers	Multiply/Divide Decimals by Whole Numbers	Divide a decimal by a whole number.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC630	SMMA_ LO_00240	Operations with Numbers	Multiply/Divide Decimals to Determine Missing Factor	Determine the missing factor in the multiplication number sentence (decimals, to ten-thousandths).
AP696	SMMA_ LO_02263	Operations with Numbers	Multiply/Divide Decimals to Determine Missing Factor	Determine the unknown decimal in an equation involving any of the four operations.
DV675	SMMA_ LO_00303	Operations with Numbers	Multiply/Divide Whole Numbers to Determine Missing Dividend/Divisor	Find the missing dividend or divisor (combinations 20 _ 20 to 90 _ 90).
DC640	SMMA_ LO_00243	Operations with Numbers	Subtract Decimals with Regrouping to Ten-Thousandths	Subtract decimals with regrouping (to ten-thousandths).
GE615	SMMA_ LO_00508	Operations with Numbers	Multiply Mixed Numbers	Multiply mixed numbers to determine the area of a rectangle or triangle; simplify if necessary.
PS600	SMMA_ LO_01713	Operations with Numbers	Determine Percent	Determine the percent (100 total items).

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR650	SMMA_ LO_01789	Operations with Numbers	Divide Mixed Numbers by Fractions	Divide a mixed number by a fraction; simplify if necessary.
FR625	SMMA_ LO_01788	Operations with Numbers	Divide Mixed Numbers by Fractions	Divide a fraction by a fraction; simplify if necessary.
DC605	SMMA_ LO_01785	Operations with Numbers	Add Decimals to Hundredths	Add the decimal numbers provided on a data table.
DC600	SMMA_ LO_01786	Operations with Numbers	Subtract Decimals to Hundredths	Subtract the decimal numbers provided on a data table.
DC699	SMMA_ LO_02261	Operations with Numbers	Subtract Decimals to Hundredths	Solve multi-step real-world problems involving any of the four operations including decimals.
FR692	SMMA_ LO_02328	Operations with Numbers	Subtract Mixed Numbers with Like Denominators	Solve multi-step real-world problems involving any of the four operations including fractions.
DC612	SMMA_ LO_00228	Operations with Numbers	Subtract Decimals Vertically with Regrouping to Thousandths	Align the decimal numbers for a vertical subtraction problem; then solve (to thousandths).

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DC615	SMMA_ LO_00233	Operations with Numbers	Subtract Decimals Vertically with Regrouping to Thousandths	Align the decimal numbers in a vertical subtraction problem; then solve (decimals to thousandths).
DC610	SMMA_ LO_00226	Operations with Numbers	Add Decimals with Regrouping	Align the decimal numbers for a vertical addition problem; then solve (to thousandths).
AD625	SMMA_ LO_00099	Operations with Numbers	Add Three-Digit/Four-Digit Whole Numbers with Regrouping	Add two addends (student choice, a three-digit and a four-digit addends, sums 1111 to 10998, regrouping in all places).
AD600	SMMA_ LO_00098	Operations with Numbers	Add Three-Digit Whole Numbers with Regrouping	Add three addends (student choice, three-digit addends, sums 311 to 2997, regrouping in all places).
SU650	SMMA_ LO_01502	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hundreds/Thousands Place	Subtract across zero (student choice, four-digit minuends with a 0 in the tens place, regrouping from the tens, hundreds, and thousands places).
SU675	SMMA_ LO_01503	Operations with Numbers	Subtract Whole Numbers with Regrouping from Tens/Hundreds/Thousands Place	Subtract across zero (student choice, four-digit minuends with a 0 in the tens place, regrouping from the tens, hundreds, and thousands places).



Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU600	SMMA_ LO_01498	Operations with Numbers	Subtract Four-Digit Numbers with Regrouping	Find the difference of two whole numbers (student choice, four-digit numbers, regrouping from tens and hundreds places).
SU625	SMMA_ LO_01501	Operations with Numbers	Subtract Four-Digit Numbers with Regrouping	Find the difference of two whole numbers (student choice, four-digit numbers, regrouping from tens and thousands places).
AD650	SMMA_ LO_00100	Operations with Numbers	Add Four-Digit Whole Numbers with Regrouping	Add two addends (student choice, four-digit addends, sums 2111 to 19998, regrouping in all places).
WP690	SMMA_ LO_01616	Operations with Numbers	Solve Division Problems in Context	Solve a division problem in context (remainder).
WP605	SMMA_ LO_01575	Operations with Numbers	Solve Multiplication/Division Problems in Context	Given a rate and a model, find a distance.
NC622	SMMA_ LO_00269	Operations with Numbers	Convert between Percents, Fractions, and Decimals	Express a percent as a fraction and simplify.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC625	SMMA_ LO_00270	Operations with Numbers	Solve Percent Problems Involving Money	Find a percent of a money amount (\$0.80 to \$10.80).
NC632	SMMA_ LO_00275	Operations with Numbers	Solve Percent Problems Using Part-Whole Relationships	Find a percent of a number (the percent is greater than or equal to 100).
NC635	SMMA_ LO_00276	Operations with Numbers	Solve Percent Problems Using Part-Whole Relationships	Find the percent given the whole and the part.
NC638	SMMA_ LO_00277	Operations with Numbers	Solve Percent Problems Using Part-Whole Relationships	Find the whole given the percent and the part.
DV600	SMMA_ LO_00300	Operations with Numbers	Use Conceptual Models to Understand Division	Represent a quotient by using arrays, area models, or equations.
FR620	SMMA_ LO_00487	Operations with Numbers	Divide Decimals	Divide fraction by fraction; simplify if necessary.
FR675	SMMA_ LO_00491	Operations with Numbers	Divide Fractions by Mixed Numbers	Divide a fraction by a mixed number; simplify if necessary.

Grade 6		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
FR670	SMMA_ LO_00502	Operations with Numbers	Divide Mixed Numbers by Whole Numbers	Divide a mixed number by a whole number.
FR640	SMMA_ LO_00512	Operations with Numbers	Divide Fractions	Divide fraction by fraction; simplify.
DC635	SMMA_ LO_00241	Place Value	Identify Decimal Place Value to Ten-Thousandths	Identify the place value of a digit in a decimal number (tenths to ten thousandths).
AP685	SMMA_ LO_02112	Graph, Chart, and Table Construction	Points in the Coordinate Plane	Graph points on a coordinate plane based on a real-world context.

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# Patterns, Algebra, and Functions

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS660	SMMA_ LO_01750	Functions and Relations	Generate a Table Given a Rule	Complete a table given a two-step rule (single-digit whole numbers).
PS675	SMMA_ LO_01751	Functions and Relations	Generate a Table Given a Rule	Complete a table given a two-step rule (whole numbers).
WP635	SMMA_ LO_01755	Functions and Relations	Generate a Table Given a Rule	Generate a table of values given a one-step rule.
WP640	SMMA_ LO_01756	Functions and Relations	Generate a Table Given a Rule	Generate a table of values given a two-step rule.
AP665	SMMA_ LO_01757	Functions and Relations	Generate a Table Given a Rule and Graph	Complete an input/output table given a one-step rule; then plot the ordered pairs on a coordinate grid.
AP670	SMMA_ LO_01758	Functions and Relations	Generate a Table Given a Rule and Graph	Complete an input/output table given a two-step rule; then plot the ordered pairs on coordite grid.

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP687	SMMA_ LO_02139	Functions and Relations	Generate a Table Given a Rule and Graph	Make a table and a graph when given a rule in the form $y = ax$ or $y = x + a$ .
AP695	SMMA_ LO_02195	Functions and Relations	Independent and Dependent Quantities	Identify independent and dependent quantities from tables and graphs.
WP620	SMMA_ LO_01743	One-Step Equations	Solve One-Step Equations in Context	Solve a one-step equation in context (addition, two-digit whole numbers).
WP625	SMMA_ LO_01744	One-Step Equations	Solve One-Step Equations in Context	Solve a one-step equation in context (subtraction, two-digit whole numbers).
WP630	SMMA_ LO_01747	One-Step Equations	Solve One-Step Equations in Context	Solve a one-step equation in context (division, two-digit whole numbers).
WP645	SMMA_ LO_01745	One-Step Equations	Solve One-Step Equations in Context	Solve a one-step equation in context (division, two-digit whole numbers).
EQ657	SMMA_ LO_00367	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for $a$ or $b$ in $a + b = c$ (decimals to tenths, no regrouping).

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ660	SMMA_ LO_00368	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for a or b in $a - b = c$ (decimals to tenths, regrouping).
EQ665	SMMA_ LO_00369	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for a or b in $a \times b = c$ (products from $0.2 \times 0.6$ to $0.9 \times 0.9$ ).
EQ670	SMMA_ LO_00370	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for a or b in $a \div b = c$ (combinations $0.6 \div 0.6$ to $0.9 \div 0.9$ ).
EQ690	SMMA_ LO_00378	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for a or b in $a \div b = c$ (up to 4-digit decimals).
EQ645	SMMA_ LO_00359	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \div b = c$ (combinations $2 \div 10$ to $5 \div 12$ ).
EQ632	SMMA_ LO_00361	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \div b = c$ (combinations $6 \div 10$ to $9 \div 12$ ).
EQ640	SMMA_ LO_00365	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \div b = c$ (combinations $6 \div 20$ to $9 \div 90$ , multiples of 10).

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ650	SMMA_ LO_00363	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \times b = x$ (products 2 x 10 to 12 x 12).
EQ655	SMMA_ LO_00366	One-Step Equations	Solve One-Step Equations Involving Whole Numbers	Solve for a or b in $a \times b = x$ (products 2 x 20 to 12 x 90, multiples of 10).
EQ612	SMMA_ LO_01688	One-Step Equations	Solve One-Step Equations	Solve a one-step equation (subtraction).
EQ620	SMMA_ LO_01692	One-Step Equations	Solve One-Step Equations	Solve a one-step equation (division).
EQ685	SMMA_ LO_01798	One-Step Equations	Solve One-Step Equations	Solve for a in $a/b = c$ .
EQ615	SMMA_ LO_01690	One-Step Equations	Solve One-Step Equations	Solve a one-step equation (multiplication).
EQ622	SMMA_ LO_00379	One-Step Equations	Complete the Steps to Solve the One-Step Equation	Solve for a in $a + b = c$ or $a - b = c$ in steps (whole number sums and differences 2 to 20).

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ625	SMMA_ LO_00380	One-Step Equations	Complete the Steps to Solve the One-Step Equation	Solve for $x$ in $ax = c$ in steps (products $4 \times 4$ to $9 \times 10$ ).
EQ630	SMMA_ LO_00381	One-Step Equations	Complete the Steps to Solve the One-Step Equation	Complete the steps to solve for $a$ in $a \cdot b = c$ (combinations $4 \times 4$ to $9 \times 10$ ).
EQ677	SMMA_ LO_00376	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve for $a$ or $b$ in $a \times b = c$ (products from $0.02 \times 0.13$ to $0.09 \times 0.19$ ).
EQ675	SMMA_ LO_01796	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve one-step equations (addition and subtraction, fractions).
PS690	SMMA_ LO_01754	Patterns	Extend a Recursive Pattern	Extend an iterative pattern.
PS625	SMMA_ LO_01741	Patterns	Identify an Expression to Describe a Pattern	Write an equation that represents the relationship between independent and dependent quantities from a table.
AP630	SMMA_ LO_01742	Patterns	Identify an Expression to Describe a Pattern	Identify an expression to describe the pattern generated by a table.



Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP632	SMMA_ LO_01752	Patterns	Identify an Expression to Describe a Pattern	Identify a two-step expression to describe the pattern generated by a table (input = 100).
AP635	SMMA_ LO_01753	Patterns	Identify an Expression to Describe a Pattern	Identify a two-step expression to describe the pattern generated by a table (input = 1000).
NC685	SMMA_ LO_01115	Patterns	Identify the Missing Number in a Pattern	Find a missing number in an arithmetic sequence (-200 to 200, intervals 3 to 8).
AP657	SMMA_ LO_01813	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the one-step equation that is a translation of the written phrase within a context.
EQ663	SMMA_ LO_01080	Written Equations	Identify the Two Equations That Are Translations of the Written Phrase	Identify related multiplication and division number sentences that can be used to solve a problem.
AP655	SMMA_ LO_01759	Written Expressions	Identify the Expression That Is a Translation of the Written Phrase	Identify the expression that is a translation of the written phrase.

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ605	SMMA_LO_02056	Written Expressions	Create an Expression That Is a Translation of a Written Phrase	Write expressions that record operations with numbers and variables.
WP600	SMMA_LO_02062	Written Expressions	Create an Expression That Is a Translation of a Written Phrase	Write an expression to represent a real-world problem, using variables to represent numbers.
NC675	SMMA_LO_02057	Written Expressions	Identify Parts of an Expression Using Mathematical Terms	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).
EQ680	SMMA_LO_02059	Written Expressions	Determine Equivalent Expressions	Apply the properties of operations to generate equivalent expressions.
EQ695	SMMA_LO_02060	Written Expressions	Determine Equivalent Expressions	Choose all expressions that are equivalent to a given expression.
AP620	SMMA_LO_01740	Expressions	Evaluate Expressions in Context	Evaluate an expression within a context (multiplication).

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP612	SMMA_ LO_01683	Expressions	Evaluate Expressions	Given the value for the variable, evaluate an addition expression (sums 4 to 12).
AP615	SMMA_ LO_01685	Expressions	Evaluate Expressions	Evaluate an expression with variables using substitution and a value chart (addition, sums to 18).
EQ600	SMMA_ LO_01739	Expressions	Evaluate Expressions	Evaluate the expression $mx + c$ or $mx - c$ .
EQ610	SMMA_ LO_02061	Written Inequalities	Determine if Given Values Solve the Equation or Inequality	Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
WP680	SMMA_ LO_02065	Written Inequalities	Represent the Solution to an Inequality on a Number Line	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.
WP675	SMMA_ LO_02064	Written Inequalities	Create an Inequality That Is a Translation of a Written Phrase	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint in a real-world problem.

Grade 6		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ635	SMMA_ LO_00357	One-Step Equations and Inequalities	Solve One-Step Equations and Inequalities Involving Whole Numbers	Represent solutions for one-variable, one-step equations and inequalities on number lines.

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## Speed Games (Fluency)

Grade 6		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG600	SMMA_SG_ 00600	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 20.
SG620	SMMA_SG_ 00620	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 20.

Grade 6		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG670	SMMA_SG_00670	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 20.
SG680	SMMA_SG_00680	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG630	SMMA_SG_00630	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG660	SMMA_SG_00660	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 50.
SG690	SMMA_SG_00690	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.
SG650	SMMA_SG_00650	Operations with Numbers	Subtract Using Basic Math Facts	Practice subtraction using basic facts; minuends, subtrahends less than or equal to 12.

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## Performance Tasks

Grade 6		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT973	SMMA_ LO_02509	Problem Solving	1. Solve percent problems involving Part-Whole relationships	Calculate and compare percents.
PT976	SMMA_ LO_02510	Problem Solving	2. Solve multiplication/division problems in context	Calculate and compare unit rates involving decimals to the hundredths.
PT979	SMMA_ LO_02511	Problem Solving	3. Evaluate expressions in context	Write expressions from words..

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# Data Analysis

Grade 7		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR775	SMMA_ LO_01208	Graph, Chart, and Table Construction	Read and Interpret Circle Graphs	Read and interpret data from a circle graph labeled with percents.
PR760	SMMA_ LO_01206	Graph, Chart, and Table Construction	Read and Interpret Line Graphs	Read and interpret a line graph.
PR765	SMMA_ LO_01207	Graph, Chart, and Table Construction	Read and Interpret Pictographs	Complete and interpret a pictograph.
PR704	SMMA_ LO_02177	Measures of Center and Spread	Determine Differences in Data Dis- tributions Using Mean and MAD	Use MAD to identify the difference between the means of two data distributions.
PR703	SMMA_ LO_02219	Measures of Center and Spread	Interpret Box Plots	Determine minimum, maximum, range, median, and IQR in a box plot.
PR702	SMMA_ LO_02203	Data Interpretation	Determine Representative Samples in Context	Identify representative samples of a pop- ulation.

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# Geometry

Grade 7		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE780	SMMA_ LO_00674	Angle Relationships	Find the Missing Angle	Find the measure of the missing angle in a diagram.
GE760	SMMA_ LO_00670	Angle Relationships	Identify Vertical Angles	Establish that vertical angles are congruent.
GE725	SMMA_ LO_00663	Angle Relationships	Identify Complementary and Supplementary Angles	Measure complementary or supplementary angles and find the sum of the angle measures.
GE720	SMMA_ LO_00661	Angle Relationships	Identify Complementary and Supplementary Angles	Measure complementary or supplementary angles and find the sum of the angle measures.
GE750	SMMA_ LO_00668	Attributes of Three-Dimensional Figures	Identify Cross Sections of a Three-Dimensional Figure	Identify the cross section of a three-dimensional figure.
GE740	SMMA_ LO_00667	Attributes of Three-Dimensional Figures	Identify Geometric Solids	Identify geometric solids (prisms, pyramids, cones, or spheres).



Grade 7		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE790	SMMA_LO_00675	Attributes of Three-Dimensional Figures	Identify Nets for Three-Dimensional Figures	Identify the net for a geometric solid.
GE775	SMMA_LO_00673	Similarity and Congruence	Match Congruent Two-Dimensional Figures	Match the corresponding sides or angles of two similar figures.
GE707	SMMA_LO_00513	Similarity and Congruence	Identify the Scale Factor in Similar Figures	Identify the scale factor in similar shapes to find the missing corresponding sides.
ME710	SMMA_LO_00828	Circle Geometry	Measure the Radius, Diameter, and Circumference of a Circle	Find the circumference, given the length of the diameter or the radius ( $\pi = 3.14$ ).
GE701	SMMA_LO_00633	Circle Geometry	Identify the Center, Radius, Chord, or Diameter of a Circle	Identify parts of a circle (chord, radius, diameter, center, circumference) center, radius, and diameter).
GE705	SMMA_LO_02176	Attributes of Two-Dimensional Figures	Determine Geometric Shapes with Given Conditions	Determine if triangles can be constructed with given sides and angles.

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## Measurement

Grade 7		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
ME790	SMMA_ LO_00840	Measurement of Three-Dimensional Figures	Calculate the Surface Area of a Cylinder or Sphere	Use a formula to find the surface area of a cylinder or sphere.
GE794	SMMA_ LO_02270	Measurement of Three-Dimensional Figures	Calculate the Surface Area of a Cylinder or Sphere	Determine the surface area of a right circular cyl- inder using the figure's net.
GE795	SMMA_ LO_02271	Measurement of Three-Dimensional Figures	Calculate the Surface Area of a Cylinder or Sphere	Determine the surface area of right circular cyl- inders within real-world situations.
ME780	SMMA_ LO_00838	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rect- angular or Triangular Prism	Find the volume of a rectangular or triangular prism.

Grade 7		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
AP765	SMMA_ LO_01819	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rect- angular Prism	Calculate the volume of a rectangular prism; then convert the cubic feet or cubic meters into gallons or liters.
ME775	SMMA_ LO_00837	Time	Convert Months to Years	Convert units of time (seconds, minutes, hours, days, weeks, months, and years).
ME700	SMMA_ LO_00815	Units of Measure	Measure Length in Customary or Metric Units	Determine distances from scale drawings (inches to miles, cm to km).
ME791	SMMA_ LO_02267	Units of Measure	Convert Measurement Units	Solve mathematical problems that involve the con- version of units across different measurement sys- tems.
ME725	SMMA_ LO_01780	Circle Meas- urement	Measure the Radius of a Circle, then Determine the Cir- cumference	Measure the radius of a circle, and then determine the circumference.
ME750	SMMA_ LO_01783	Circle Meas- urement	Measure the Radius of a Circle, then Determine the Area.	Measure the radius of a circle, and then determine the area.

Grade 7		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
GE700	SMMA_ LO_01784	Circle Measurement	Measure the Circumference of a Circle	Determine the most accurate representation of the circumference of a circle.
GE765	SMMA_ LO_01781	Circle Measurement	Measure the Diameter of a Circle, then Determine the Area.	Use the diameter of a circle, to find the radius and then calculate the area of a circle.
ME720	SMMA_ LO_01779	Circle Measurement	Measure the Diameter of a Circle, then Determine the Circumference	Measure the diameter of a circle, and then determine the circumference.
GE771	SMMA_ LO_02269	Circle Measurement	Measure the Shaded Area of a Circle	Determine the area of the shaded section of a given circle.
ME730	SMMA_ LO_00827	Measurement of Two-Dimensional Figures	Find the Area of a Triangle	Find the area of a triangle using a formula.
ME705	SMMA_ LO_00824	Measurement of Two-Dimensional Figures	Calculate Area Using Metric Units	Use a formula to find the area of a parallelogram.

\* Math Concepts and Skills

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## Number Sense and Operations

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP750	SMMA_ LO_01629	Estimation	Estimate Sums/Differences Involving Money	Find the number of dollar bills needed to buy two to four items (each \$1.79 to \$3.99 each).
PS725	SMMA_ LO_01095	Estimation	Estimate Products/Quotients	Estimate the sum, product, or quotient in problems with fractions.
AP710	SMMA_ LO_01824	Number Sense	Absolute Value	Evaluate the absolute value of a number.
DC725	SMMA_ LO_00259	Number Sense	Determine Equivalent Decim- als and Percents	Determine the equivalent fraction for a decimal (the denominator is a factor of 100).
DC750	SMMA_ LO_00260	Number Sense	Determine Equivalent Decim- als and Percents	Determine the equivalent decimal for a mixed number.
AP702	SMMA_ LO_01336	Number Sense	Solve Ratios/Proportion Prob- lems Involving Time/Cost	Given the number of kilowatt-hours used and a price, find the total cost of power.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AP727	SMMA_ LO_01339	Number Sense	Solve Ratios/Proportion Problems Involving Time/Cost	Convert light years to kilometers and kilometers to light years.
AP700	SMMA_ LO_01826	Number Sense	Solve Ratios/Proportion Problems Involving Time/Cost	Identify the correct proportion for the context, and then solve.
AP705	SMMA_ LO_02001	Number Sense	Ratios and Proportions	Identify the unit rate given a table, a graph, an equation, a diagram, or a word problem.
AP715	SMMA_ LO_02002	Number Sense	Ratios and Proportions	Identify the constant of proportionality given a table, a graph, an equation, a diagram, or a word problem.
AP730	SMMA_ LO_02089	Number Sense	Ratios and Proportions	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.
NC725	SMMA_ LO_01827	Number Sense	Ratios and Proportions	Determine the fraction needed to complete the proportion.
AP796	SMMA_ LO_02268	Number Sense	Ratios and Proportions	Graph the proportional relationship from a given equation.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
GE710	SMMA_ LO_00660	Number Sense	Solve Ratios/Proportions in Measurement Context	Form a proportion that can be used to solve for the height of an object.
DC700	SMMA_ LO_00258	Number Sense	Determine Equivalent Frac- tions and Decimals	Divide to convert from a fraction to a decimal equivalent.
NC710	SMMA_ LO_02087	Number Sense	Determine Equivalent Frac- tions	Identify fractions that are equivalent to a given negative fraction.
NC700	SMMA_ LO_02086	Number Sense	Use Opposite Integers to Rep- resent Quantities	Describe situations that can be represented by opposite quantities.
AP720	SMMA_ LO_02111	Number Sense	Compare Numbers	Compare the absolute values of positive and negative quantities in a real-world situation.
SU775	SMMA_ LO_01528	Number Sense	Compare Sums/Difference of Integers	Compare sums and difference of positive and negative integers (-5 to 5).
AD795	SMMA_ LO_00129	Number Sense	Identify Equivalent Expres- sions Using Distributive Prop- erty of Multiplication	Identify an equivalent expression for $a \times (b + c)$ with vari- ables.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD790	SMMA_ LO_00130	Number Sense	Identify Equivalent Expressions Using Distributive Property of Multiplication	Identify $a \times (b - c)$ as equivalent to $(a \times b) - (a \times c)$ .
AP725	SMMA_ LO_02113	Number Sense	Points in the Coordinate Plane	Find distances between points with the same first coordinate or the same second coordinate by using coordinates and absolute value.
SU795	SMMA_ LO_01533	Number Sense	Use Distributive Property of Multiplication to Identify Equivalent Expressions	Identify $a \times (b - c)$ as equivalent to $(a \times b) - (a \times c)$ with variables.
SU790	SMMA_ LO_01534	Number Sense	Use Distributive Property of Multiplication to Identify Equivalent Expressions	Identify $a \times (b - c)$ as equivalent to $(a \times b) - (a \times c)$ .
AD777	SMMA_ LO_00120	Number Theory	Compare Expressions Using the Additive Inverse Property	Compare two expressions using the additive inverse property.



Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD750	SMMA_LO_00114	Number Theory	Identify Equivalent Integer Expressions Using the Commutative Property of Addition	Identify an equivalent expression of commutativity for addition of integers.
SU752	SMMA_LO_01514	Number Theory	Identify Equivalent Integer Expressions	Identify $a - b$ as equivalent to $a + (-b)$ , where $a$ and $b$ are 1 to 20.
AD740	SMMA_LO_00111	Operations with Numbers	Add Integers	Add three integers (sum -10 to 10).
AD745	SMMA_LO_00113	Operations with Numbers	Add Integers	Add integers in an associative expression $((a + b) + c)$ , three addends -10 to 10).
AD775	SMMA_LO_00119	Operations with Numbers	Add Integers	Find the sum of four integers when two are additive inverses ( $a, b, c,$ and $d$ have absolute values 1 to 20).
AD705	SMMA_LO_00108	Operations with Numbers	Add Integers	Add a positive and a negative integer (one-digit addends, sums -9 to 9).
AD710	SMMA_LO_00109	Operations with Numbers	Add Integers	Add two integers using addition facts (addends -10 to 10, sums -20 to 20).

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD715	SMMA_ LO_00121	Operations with Numbers	Add Integers	Add two integers (-20 to 20).
FR725	SMMA_ LO_00509	Operations with Numbers	Add Mixed Numbers with Unlike Denominators	Add mixed numbers within a context; simplify if necessary (unlike denominators).
DC775	SMMA_ LO_00263	Operations with Numbers	Divide Decimals	Divide a decimal by 0.1, 0.01, or 0.001.
DC790	SMMA_ LO_00267	Operations with Numbers	Divide Decimals	Divide a decimal by 0.1, 0.01, or 0.001 (dividends 0.001 to 0.999).
FR700	SMMA_ LO_00489	Operations with Numbers	Divide Fractions by Whole Numbers	Divide a fraction by a whole number; simplify if necessary.
AD760	SMMA_ LO_00117	Operations with Numbers	Identify Equivalent Integer Expressions	Identify an equivalent expression with integers (four one-digit addends).
SU755	SMMA_ LO_01515	Operations with Numbers	Identify Equivalent Integer Expressions	Identify $-a - b$ as equivalent to $-a + (-b)$ (minuends -20 to -1).

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU760	SMMA_ LO_01517	Operations with Numbers	Identify Equivalent Integer Expressions	Identify $a - (-b)$ as equivalent to $a + b$ (minuends 1 to 10).
SU765	SMMA_ LO_01521	Operations with Numbers	Identify Equivalent Integer Expressions	Identify $-a - (-b)$ as equivalent to $-a + b$ (minuends and subtrahends -9 to 9).
AD755	SMMA_ LO_00115	Operations with Numbers	Identify Equivalent Integer Expressions Using Dis- tributive Property of Mul- tiplication	Identify $-(a + b)$ as equivalent to $-a + (-b)$ , where $a$ and $b$ are 1 to 9.
AD757	SMMA_ LO_00116	Operations with Numbers	Identify Equivalent Integer Expressions Using Dis- tributive Property of Mul- tiplication	Identify $-(a + b)$ as equivalent to $-a - b$ , where $a$ and $b$ are 1 to 9.
AD765	SMMA_ LO_00118	Operations with Numbers	Identify Equivalent Integer Expressions Using Dis- tributive Property of Mul- tiplication	Identify $-(a + b)$ as equivalent to $-a - b$ , where $a$ and $b$ are 1 to 9.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU780	SMMA_ LO_01523	Operations with Numbers	Identify Equivalent Integer Expressions Using Distributive Property of Multiplication	Identify $-(a - b)$ as equivalent to $-a + b$ (a and b from 1 to 9).
SU767	SMMA_ LO_01524	Operations with Numbers	Identify Equivalent Integer Expressions Using Distributive Property of Multiplication	Identify $-(-a - b)$ as equivalent to $a + b$ (a and b from 1 to 9).
AD787	SMMA_ LO_00124	Operations with Numbers	Identify Equivalent Integer Expressions Using Distributive Property of Multiplication	Identify an equivalent variable expression $-(a + b) = -a + (-b)$ .
SU785	SMMA_ LO_01529	Operations with Numbers	Identify Equivalent Integer Expressions Using Distributive Property of Multiplication	Identify $-(a - b)$ as equivalent to $-a + b$ with variables.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU787	SMMA_ LO_01530	Operations with Numbers	Identify Equivalent Integer Expressions Using Distributive Property of Multiplication	Identify $-(-a - b)$ as equivalent to $a + b$ with variables.
WP775	SMMA_ LO_01630	Operations with Numbers	Multiply and Divide Decimals in Context	Find the total money earned, given the number of hours worked and the hourly rate.
DV775	SMMA_ LO_00310	Operations with Numbers	Multiply/Divide Whole Numbers to Determine Missing Dividend/Divisor	Finding the missing dividend or divisor (combinations 6 x 13 to 9 x 19).
SU730	SMMA_ LO_01522	Operations with Numbers	Subtract Integers	Subtract integers (minuends -10 to 0, subtrahends -10 to -1).
SU712	SMMA_ LO_01506	Operations with Numbers	Subtract Integers	Subtract integers (minuends 0 to 10, subtrahends 1 to 10, differences negative).
SU720	SMMA_ LO_01507	Operations with Numbers	Subtract Integers	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU727	SMMA_ LO_01509	Operations with Numbers	Subtract Integers	Find the missing subtrahend in a number sentence (minuends 0 to 10, subtrahends 2 to 11, negative differences).
SU750	SMMA_ LO_01512	Operations with Numbers	Subtract Integers	Find the missing subtrahend in a number sentence (minuends -9 to 0, differences -9 to 0).
SU732	SMMA_ LO_01510	Operations with Numbers	Subtract Integers	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).
SU735	SMMA_ LO_01513	Operations with Numbers	Subtract Integers	Subtract integers (minuends -11 to -20, subtrahends -1 to -10, negative differences).
SU715	SMMA_ LO_01511	Operations with Numbers	Subtract Integers Using a Number Line	Subtract integers using a number line (differences -5 to 4).
AD712	SMMA_ LO_00107	Operations with Numbers	Add Negative Integers	Add two negative integers or add 0 and a negative integer (sums -20 to 0).
SU772	SMMA_ LO_01527	Operations with Numbers	Evaluate Integer Expressions	Evaluate a numerical expression $(a) + (b) - (c)$ , where a, b, and c have values from -9 to 9.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU770	SMMA_ LO_01531	Operations with Numbers	Evaluate Integer Expressions	Evaluate the expression $-(a - b)$ , where $a$ and $b$ have values from 1 to 9.
SU777	SMMA_ LO_01532	Operations with Numbers	Evaluate Integer Expressions	Evaluate the expression $-(-a - b)$ , where $a$ and $b$ have values from 1 to 9.
SU757	SMMA_ LO_01518	Operations with Numbers	Evaluate Integer Expressions	Evaluate the expression $-(-a)$ , where $a$ has values 1 to 99.
SU710	SMMA_ LO_01505	Operations with Numbers	Identify Integers Using a Number Line	Subtract integers using a number line (differences -5 to 1).
SU740	SMMA_ LO_01516	Operations with Numbers	Add/Subtract Integers to Determine Missing Subtrahend	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).
SU725	SMMA_ LO_01519	Operations with Numbers	Add/Subtract Integers to Determine Missing Subtrahend	Subtract integers (minuend 0, subtrahends 1 to 20).

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
SU742	SMMA_ LO_01520	Operations with Numbers	Add/Subtract Integers to Determine Missing Sub- trahend	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).
SU745	SMMA_ LO_01525	Operations with Numbers	Add/Subtract Integers to Determine Missing Sub- trahend	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).
SU747	SMMA_ LO_01526	Operations with Numbers	Add/Subtract Integers to Determine Missing Sub- trahend	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).
SU722	SMMA_ LO_01508	Operations with Numbers	Add/Subtract Integers to Determine Missing Sub- trahend	Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).
AD780	SMMA_ LO_00122	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing addend in a number sentence (sums -20 to 20).
AD785	SMMA_ LO_00123	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing addend in a number sentence (three addends, -10 to 10).



Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AD720	SMMA_ LO_00102	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing one-digit addend in a number sentence (positive or negative integers, sums are 0).
AD722	SMMA_ LO_00103	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing two-digit addend in a number sentence (sums are 0).
AD725	SMMA_ LO_00104	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing two-digit addend in a number sentence (sums are 0, missing addend is first).
AD730	SMMA_ LO_00105	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing negative addend in a number sentence (sums 1 to 8).
AD732	SMMA_ LO_00110	Operations with Numbers	Add/Subtract Integers to Determine Missing Addend	Find the missing addend in a number sentence (missing addends -10 to 10, sums -20 to 20).
AD735	SMMA_ LO_00106	Operations with Numbers	Determine Signs of Integer Sums	Determine if the sum is positive or negative (one- and two-digit addends).
WP700	SMMA_ LO_01627	Operations with Numbers	Express Probabilities as Frac- tions	Find the amount of an ingredient needed to make two, three or four times a recipe.

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
DV750	SMMA_ LO_02088	Operations with Numbers	Divide Rational Numbers in Context	Interpret quotients of rational numbers by describing real-world contexts.
AD700	SMMA_ LO_02085	Operations with Numbers	Connect Pictoral Model with Addition/Subtraction Number Sentence	Represent addition of integers on a number line.
SU700	SMMA_ LO_02154	Operations with Numbers	Connect Pictoral Model with Addition/Subtraction Number Sentence	Represent addition and subtraction of rational numbers (decimals) on a number line.
SU705	SMMA_ LO_02153	Operations with Numbers	Connect Pictoral Model with Addition/Subtraction Number Sentence	Represent addition and subtraction of rational numbers (fractions) on a number line.
SU717	SMMA_ LO_02152	Operations with Numbers	Connect Pictoral Model with Addition/Subtraction Number Sentence	Represent subtraction of integers on a number line.
MU700	SMMA_ LO_00916	Operations with Numbers	Determine Signs of Integer Products	Determine the sign of the products of two integers (one and two-digit integers).

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU750	SMMA_ LO_00919	Operations with Numbers	Determine Signs of Integer Products	Determine the sign of the product of four factors.
DV700	SMMA_ LO_00305	Operations with Numbers	Divide Whole Numbers without Remainders Using Long Division	Divide (combinations 2 x 13 to 5 x 19, no remainder).
AD770	SMMA_ LO_00128	Operations with Numbers	Evaluate Integer Expressions Using Distributive Property of Multiplication	Evaluate $-(-a + b)$ , where $1 < a, b < 9$ .
MU735	SMMA_ LO_00914	Operations with Numbers	Multiply Integers	Multiply a negative integer by a positive integer (products -144 to -4).
MU725	SMMA_ LO_00917	Operations with Numbers	Multiply Integers	Multiply a negative integer by a positive integer (one-digit number x two-digit multiple of 10).
MU760	SMMA_ LO_00920	Operations with Numbers	Multiply Integers	Multiply three integers (one-digit factors with absolute val- ues 2 to 10).

Grade 7		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
MU710	SMMA_ LO_00915	Operations with Numbers	Multiply Negative Integers	Multiply two negative integers (products 4 to 144).
MU775	SMMA_ LO_00918	Operations with Numbers	Multiply/Divide Integers to Determine Missing Dividend/Divisor	Find the missing positive or negative factor in a number sentence.
NC775	SMMA_ LO_00278	Operations with Numbers	Determine Percent	Find the percent of increase.
FR750	SMMA_ LO_00506	Operations with Numbers	Multiply Fractions and Sim- plify	Multiply three fractions; simplify if necessary.
NC750	SMMA_ LO_00845	Operations with Numbers	Solve Percent Problems Involving Money	Identify a correct expression to solve a problem about sales tax.

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# Patterns, Algebra, and Functions

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
WP725	SMMA_ LO_02150	Simplify Expressions	Simplify Expressions by Factoring and Combining Like Terms	Rewrite an expression from context by factoring and combining like terms.
EQ747	SMMA_ LO_02149	Expressions	Combining Linear Expressions	Apply properties of operations to add two linear expressions.
EQ702	SMMA_ LO_02307	Expressions	Combining Linear Expressions	Create equivalent expressions that contain rational coefficients.
EQ767	SMMA_ LO_01842	Expressions	Evaluate Expressions	Evaluate an algebraic expression (integers -10 to 10).
EQ777	SMMA_ LO_01843	Expressions	Evaluate Expressions	Evaluate an algebraic expression with three variables (-5.9 to 5.9).
EQ772	SMMA_ LO_01818	Expressions	Evaluate Expressions with Exponents	Evaluate an algebraic expression with exponents (integers -10 to 10).

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP740	SMMA_ LO_01808	Functions and Relations	Graph on the Coordinate Plane	Graph a set of ordered pairs from a table on a coordinate plane (Quadrant I).
AP745	SMMA_ LO_01809	Functions and Relations	Graph on the Coordinate Plane	Graph a set of ordered pairs from a table on a coordinate plane (Quadrant I).
AP750	SMMA_ LO_01810	Functions and Relations	Graph on the Coordinate Plane	Graph a set of ordered pairs from a table on a coordinate plane.
EQ785	SMMA_ LO_02140	One-Step Equations	Identify the Equation That Is a Translation of the Written Phrase	Match equations and inequalities with real-world situations.
EQ712	SMMA_ LO_00382	One-Step Equations	Complete the Steps to Solve the One-Step Equation	Solve for $a$ in $ba/c = d$ by multiplying by the reciprocal.
AP747	SMMA_ LO_01799	One-Step Equations	Solve One-Step Equations in Context	Solve a one-step equation with decimals in context (addition and subtraction).
EQ732	SMMA_ LO_00396	One-Step Equations	Solve One-Step Equations	Complete the steps to solve for $x$ in $a - x = b$ .

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ704	SMMA_ LO_00373	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for a or b in $a + b = c$ (decimals to hundredths).
EQ703	SMMA_ LO_00374	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve for a or b in $a - b = c$ (decimals to hundredths, regrouping).
EQ745	SMMA_ LO_01849	One-Step Equations	Solve One-Step Equations Involving Decimals	Solve a one-step equation (decimal integers, multiplication and division).
EQ710	SMMA_ LO_01795	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve for a in $ba/c = d$ by multiplying by the reciprocal.
EQ707	SMMA_ LO_01797	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve a one-step equation (multiplication, decimals).
EQ752	SMMA_ LO_01848	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve a one-step equation (fractions, addition and subtraction).
EQ705	SMMA_ LO_01868	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve a one-step equation (fractions, addition and subtraction).

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ737	SMMA_ LO_01800	One-Step Equations	Solve One-Step Equations Involving Integers	Solve a one-step equation (multiplication and division, integers).
EQ722	SMMA_ LO_01801	One-Step Equations	Solve One-Step Equations Involving Integers	Solve a one-step equation (addition and subtraction, one-digit integers).
EQ717	SMMA_ LO_01844	One-Step Equations	Solve One-Step Equations Involving Integers	Solve a one-step equation (two-digit integers, addition and subtraction).
EQ742	SMMA_ LO_01845	One-Step Equations	Solve One-Step Equations Involving Integers	Solve a one-step equation (integers, multiplication and division).
EQ727	SMMA_ LO_00395	One-Step Equations	Solve One-Step Equations Involving Integers	Solve for x in $-x = a$ (numbers from -99 to 99).
EQ715	SMMA_ LO_00388	One-Step Equations	Solve One-Step Equations Involving Integers	Solve for a in $a + b = c$ (a is from -20 to -1).
EQ720	SMMA_ LO_00389	One-Step Equations	Solve One-Step Equations Involving Integers	Solve for a in $a - b = c$ (differences from -19 to 11).



Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ725	SMMA_ LO_00390	One-Step Equations	Solve One-Step Equations Involving Integers	Solve for $x$ in $ax = b$ (products from $-(4 \times 4)$ to $-(9 \times 9)$ ).
EQ730	SMMA_ LO_00391	One-Step Equations	Solve One-Step Equations Involving Integers	Solve for $a$ in $a/b = c$ (products from $-(4 \times 4)$ to $-(9 \times 9)$ ).
DV725	SMMA_ LO_00309	Open Sentences	Find the Missing Dividend or Divisor in a Number Sentence	Find the missing dividend or divisor (combinations $2 \times 13$ to $5 \times 19$ ).
WP710	SMMA_ LO_01805	Open Sentences	Solve for a Variable	Solve for a variable in the formula for simple interest (whole numbers and decimals).
AP760	SMMA_ LO_01817	Open Sentences	Solve for a Variable	Solve for a variable in the formula for volume of a rectangular prism (whole numbers).
AP735	SMMA_ LO_01803	Patterns	Extend a Recursive Pattern	Extend an arithmetic sequence for three more terms.
EQ700	SMMA_ LO_00371	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for $a$ , $b$ , or $c$ in $a \cdot b/c = d/e$ (combinations to $12 \cdot 12$ ).

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ750	SMMA_ LO_00372	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a, b, c, or d in $a/b \times c/d = e/f$ (combinations to 12 x 12).
EQ755	SMMA_ LO_00375	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a, b, or c in $a/b \div c = d/e$ (combinations to 12 $\div$ 12).
EQ765	SMMA_ LO_00356	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a or c in $a/b + c/b = d/b$ (sums 2/3 to 11/12).
EQ770	SMMA_ LO_00360	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a or c in $(a/b - c/b = d/b)$ (minuends 2/3 to 11/12).
EQ775	SMMA_ LO_00362	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a or c in $a/b - c/b = d/b$ (improper fractions, minuends 4/3 to 35/12).
EQ780	SMMA_ LO_00364	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a or c in $a/b + c/b = d/b$ (improper fractions, sums 4/3 to 35/12).
EQ735	SMMA_ LO_00383	Two-Step Equations	Complete the Steps to Solve the Two-Step Equation	Complete the steps to solve for x in $ax + b = c$ .

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ782	SMMA_ LO_01851	Two-Step Equations	Solve Two-Step Equations Involving Decimals	Solve a two-step equation (decimals).
EQ787	SMMA_ LO_00392	Two-Step Equations	Solve Two-Step Equations Involving Integers	Complete the steps to solve for $x$ in $ax + b = c$ ( $x$ is from -9 to -1).
EQ792	SMMA_ LO_00393	Two-Step Equations	Solve Two-Step Equations Involving Integers	Complete the steps to solve for $x$ in $ax - b = c$ ( $x$ is from -9 to 2).
EQ795	SMMA_ LO_00394	Two-Step Equations	Solve Two-Step Equations Involving Integers	Complete the steps to solve for $x$ in $ax - b = c$ ( $x$ is from -9 to 9).
EQ784	SMMA_ LO_01846	Two-Step Equations	Solve Two-Step Equations Involving Integers	Solve a two-step equation (integers).
EQ740	SMMA_ LO_00384	Two-Step Equations	Solve Two-Step Equations Involving Whole Numbers	Solve for $x$ in $ax + b = c$ .
PS775	SMMA_ LO_02264	Two-Step Equations	Solve a Two-Step Problem in Con- text	Solve multi-step real-life with positive and negative fractions.

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS750	SMMA_ LO_02309	Two-Step Equations	Solve a Two-Step Problem in Context	Solve multi-step real-life with positive and negative numbers .
WP792	SMMA_ LO_02310	Two-Step Equations	Solve a Two-Step Problem in Context	Solve word problems-compare arithmetica and algebraic solutions.
AP770	SMMA_ LO_01814	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the two-step equation that is a translation of the written phrase within a context.
PS700	SMMA_ LO_01297	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the number sentence that can be used to solve a two-step problem in context.
EQ757	SMMA_ LO_01852	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the equation translated from a written phrase.
EQ760	SMMA_ LO_00385	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the equation that translates the written phrase ( $ax + b = c$ ).
EQ762	SMMA_ LO_00386	Written Equations	Identify the Equation That Is a Translation of the Written Phrase	Identify the equation that translates the written phrase ( $ax + b = c$ ).

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP795	SMMA_LO_01816	Written Expressions	Create an Expression That Is a Translation of a Written Phrase	Translate an expression into a written phrase (two-step).
AP785	SMMA_LO_01815	Written Expressions	Identify the Expression That Is a Translation of the Written Phrase	Identify the written phrase that is a translation of a expression or inequality.
EQ701	SMMA_LO_02266	Written Expressions	Determine Equivalent Expressions	Determine whether two linear expressions are equivalent.
EQ790	SMMA_LO_02084	Written Inequalities	Solve and Graph a Linear Inequality in One Variable	Solve an inequality of the form $px + q > r$ or $px + q < r$ ; then graph the solution on a number line.
WP795	SMMA_LO_02311	Written Inequalities	Solve and Graph a Linear Inequality in One Variable	Solve word problems involving inequalities and graph the solution set of the inequality.
AP780	SMMA_LO_01869	Written Inequalities	Identify the Written Phrase That Is a Translation of the Inequality	Identify the written phrase translated from an inequality.
AP790	SMMA_LO_01870	Written Inequalities	Identify the Written Phrase That Is a Translation of the Inequality	Identify the written phrase translated from an inequality.

Grade 7		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP775	SMMA_ LO_01853	Written Inequalities	Identify the Inequality That Is a Translation of the Written Phrase	Identify the inequality translated from a written phrase.
WP790	SMMA_ LO_02083	Written Inequalities	Create an Inequality That Is a Translation of a Written Phrase	Write an inequality of the form $px + q > r$ or $px + q < r$ to represent a constraint in a real-world problem.

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## Speed Games (Fluency)

Grade 7		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG720	SMMA_SG_ 00720	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 30.
SG770	SMMA_SG_ 00770	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 50.

Grade 7		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG780	SMMA_SG_00780	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 50.
SG730	SMMA_SG_00730	Operations with Numbers	Multiply Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 30.
SG750	SMMA_SG_00750	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 100.
SG760	SMMA_SG_00760	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 100.
SG790	SMMA_SG_00790	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 100.

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# Probability and Discrete Mathematics

Grade 7		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR730	SMMA_ LO_01197	Probability	Determine the Theoretical Probability of a Compound Event	Determine the probability of an event.
PR735	SMMA_ LO_01200	Probability	Determine the Probability of Dependent Events	Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible outcomes.
PR740	SMMA_ LO_01203	Probability	Determine the Probability of Dependent Events	Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible.
PR700	SMMA_ LO_01179	Probability	Express Probability as a Ratio	Express an event as a ratio of the number of favorable outcomes to the total number of outcomes (bowl containing marbles of two colors).



Grade 7		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR780	SMMA_ LO_01209	Probability	Determine the Sample Space for an Event (Spinner)	Given a graphical representation of a spinner, count the number of possible outcomes and complete a list of all the outcomes.
PR790	SMMA_ LO_01212	Probability	Determine the Probability of Events or Paired Events as Certain, Impossible, More, Less, or Equally Likely	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.
PR785	SMMA_ LO_01211	Probability	Determine the Probability of Complementary 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).
PR705	SMMA_ LO_01137	Probability	Describe the Probability of Events as Certain or Impossible	Determine whether a chronological event is certain or impossible.
PR712	SMMA_ LO_01139	Probability	Describe the Probability of Events as Certain, Possible, or Impossible	Given information about a current situation, classify a future event as being certain, possible, or impossible.

Grade 7		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR715	SMMA_ LO_01143	Probability	Describe the Probability of Events as Certain, Possible, or Impossible	Given a sentence describing an observed event, label a future occurrence as certain, possible, or impossible.
PR710	SMMA_ LO_01147	Probability	Describe the Probability of Events as Certain, Possible, or Impossible	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.
PR720	SMMA_ LO_01153	Probability	Describe the Probability of Events as Certain, Possible, or Impossible	Create a set of colored balls whose contents are specified by whether it is certain, possible, or impossible to select a particular color.
PR770	SMMA_ LO_01173	Probability	Determine Qualitatively the High Probability Event	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.
PR755	SMMA_ LO_01163	Probability	Determine Qualitatively the More Probable Event	Given a graphical representation of an urn containing balls of three colors, determine qualitatively which event is more probable to occur.

Grade 7		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR732	SMMA_ LO_01157	Probability	Determine Qualitatively the More Probable Event	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).
PR745	SMMA_ LO_01159	Probability	Determine Qualitatively the More Probable Event	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).
PR750	SMMA_ LO_01161	Probability	Determine Qualitatively the More Probable Event	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.
PR795	SMMA_ LO_01738	Probability	Determine the Most or Least Likely Event and Conduct a Simulation to Compare Results	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.

Grade 7		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR725	SMMA_ LO_01667	Probability	Express Probability as a Fraction	Write a fraction to express the probability of an event.
PR757	SMMA_ LO_01171	Probability	Represent the Probability of Complementary Events Using a Qualitative Ordinal Scale	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.
PR777	SMMA_ LO_01165	Probability	Represent the Probability of Events Using a Qualitative Ordinal Scale	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).
PR788	SMMA_ LO_02204	Probability	Determine the Probability of Events Using a Probability Model	Determine theoretical and experimental probabilities.
PR798	SMMA_ LO_02205	Probability	Use a Simulation to Determine Compound Events	Identify a simulation to accurately determine the probability of compound events.

Grade 7		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR741	SMMA_ LO_02273	Probability	Determine Possible Outcomes for Independent Events (Spinners)	Determine the theoretical probability of an event related to a simple experiment.

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## Performance Tasks

Grade 7		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT982	SMMA_ LO_02512	Problem Solving	1. Ratios and proportions	Students calculate and use percent increase.
PT985	SMMA_ LO_02513	Problem Solving	1. Ratios and proportions	Students find and interpret the constant of proportionality and use it to write an equation. They will then use that equation.

Grade 7		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT988	SMMA_ LO_02514	Problem Solving	2. Solve problems with rational numbers in context	Students apply the 4 operations to rational numbers.

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## Data Analysis

Grade 8		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR860	SMMA_ LO_02143	Data Interpretation	Use a Trend Line to Make a Prediction	Choose an approximation based on a trend line for bivariate data.
PR855	SMMA_ LO_02179	Data Interpretation	Modeling Linear Associations	Determine the line of best fit for data in a scatter plot.

Grade 8		Strand: Data Analysis		
MCS* Level	LO ID	Concept	Topic	Description
PR865	SMMA_ LO_02180	Data Interpretation	Determine Slope and Intercept in Context	Determine the slope and intercept of a linear equation in context.
PR870	SMMA_ LO_02206	Data Interpretation	Determine Associations Between Variables Using Relative Frequencies	Determine the relative frequency of events using a two-way frequency table.
PR850	SMMA_ LO_01222	Data Collection	Formulate Questions around Discrete Data	Identify positive, negative, or no association for sets of actual data.
PR875	SMMA_ LO_01223	Data Collection	Formulate Questions around Discrete Data	Make predictions based on a sample.
PR840	SMMA_ LO_01221	Measures of Center and Spread	Compare the Variation between Two Data Sets	Find and compare the average variation of two sets of data.

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# Geometry

Grade 8		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE880	SMMA_ LO_00677	Angle Relationships	Solve a Problem Involving Equal Angles	Solve a problem involving equal angle measures.
GE860	SMMA_ LO_02129	Angle Relationships	Identify the Angles Formed by Two Lines and a Transversal	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.
GE815	SMMA_ LO_00672	Angle Relationships	Identify the Angles Formed by Two Lines and a Transversal	Establish that alternate interior angles are congruent for parallel lines.
GE867	SMMA_ LO_02278	Angle Relationships	Determine the Measure of an Angle	Find the sums of interior angles of regular polygons that have been decomposed into triangles.
GE895	SMMA_ LO_02144	Attributes of Three-Dimensional Figures	Calculate Surface Area	Use a formula to find the lateral surface area of a prism or a cylinder.



Grade 8		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
ME875	SMMA_LO_00850	Attributes of Three-Dimensional Figures	Identify the Relationship between Area and Perimeter	Identify examples of relationships between area and perimeter.
ME860	SMMA_LO_00849	Lines, Line Segments, and Rays	Identify Line Segments That Are the Same Length	Given a perimeter, mark equilateral polygons with the same side measures.
GE877	SMMA_LO_02100	Pythagorean Theorem	Find the Measurement of the Hypotenuse Using the Pythagorean Theorem	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.
GE865	SMMA_LO_01854	Pythagorean Theorem	Find the Measurement of the Hypotenuse Using the Pythagorean Theorem	Find the measurement of the hypotenuse using the Pythagorean theorem. (2D).
GE870	SMMA_LO_02131	Pythagorean Theorem	Pythagorean Theorem Proof	Explain a proof of the Pythagorean Theorem.

Grade 8		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE875	SMMA_ LO_02132	Pythagorean Theorem	Pythagorean Theorem Proof	Explain a proof of the converse of the Pythagorean Theorem.
ME840	SMMA_ LO_02130	Similarity and Congruence	Identify Similar Two-Dimensional Figures	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.
ME830	SMMA_ LO_00847	Similarity and Congruence	Identify Similar Two-Dimensional Figures	Identify similar triangles or rectangles on a geoboard.
GE800	SMMA_ LO_00645	Similarity and Congruence	Identify the Polygon That Is Not Similar to the Others	Identify the polygon that is not similar to the others (counter-example).
GE830	SMMA_ LO_02120	Transformations	Translate a Figure	Translate a figure on a coordinate plane.
GE840	SMMA_ LO_02123	Transformations	Translate a Figure	Translate a figure on a coordinate plane; verify properties of the rotation.

Grade 8		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE855	SMMA_ LO_02142	Transformations	Explain the Effect of a Dilation on Coordinates	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.
GE820	SMMA_ LO_02104	Transformations	Rotate a Figure	Rotate a figure by 90, 180, or 270 degrees clockwise or counterclockwise on a coordinate plane.
GE832	SMMA_ LO_02121	Transformations	Rotate a Figure	Rotate a figure on a coordinate plane; verify properties of the rotation.
GE825	SMMA_ LO_02105	Transformations	Reflect a Figure	Reflect a figure on a coordinate plane over the x-axis, the y-axis, or the line $y = x$ .
GE835	SMMA_ LO_02122	Transformations	Reflect a Figure	Reflect a figure on a coordinate plane over the x-axis, the y-axis, or the line $y = x$ ; verify properties of the rotation.
GE850	SMMA_ LO_02125	Transformations	Reflect a Figure	Reflect a figure, find the coordinates of the reflected figure, and describe the effect of the reflection on the coordinates.

Grade 8		Strand: Geometry		
MCS* Level	LO ID	Concept	Topic	Description
GE845	SMMA_ LO_02124	Transformations	Transform a Figure	Given two congruent figures, transform one figure so that it lines up with the other. Then, identify the sequence of transformations used.
GE810	SMMA_ LO_01776	Transformations	Classify the Transformation	Identify a transformation as a slide, flip, or a turn.
GE857	SMMA_ LO_02126	Attributes of Two-Dimensional Figures	Facts About the Angles of a Triangle	Use facts for angle sum and exterior angle of a triangle to find missing angles.
GE812	SMMA_ LO_01736	Coordinate Geometry	Determine the Missing Coordinate of a Vertex	Determine the missing coordinate of a vertex of a triangle in a transformation.

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# Measurement

Grade 8		Strand: Measurement		
MCS* Level	LO ID	Concept	Topic	Description
GE890	SMMA_ LO_01856	Circle Measurement	Measure the Diameter of a Circle, Then Determine the Circumference	Given the diameter, find the circumference of a circle within context.
GE885	SMMA_ LO_01855	Circle Measurement	Measure the Radius of a Circle, Then Determine the Circumference	Given the radius, find the circumference of a circle within context.
ME810	SMMA_ LO_00844	Measurement of Three-Dimensional Figures	Calculate the Volume of a Cone or Sphere	Use a formula to find the volume of a cone or a sphere.
ME850	SMMA_ LO_00848	Measurement of Three-Dimensional Figures	Calculate the Volume of a Rectangular Prism	Choose the best estimate for the volume of a rectangular prism.
ME800	SMMA_ LO_00839	Measurement of Three-Dimensional Figures	Calculate the Volume of a Cylinder	Use a formula to find the volume of a cylinder.
AP825	SMMA_ LO_00176	Measurement of Two-Dimensional Figures	Find the Area of a Triangle	Find the area of a triangle (2 to 72 square inches).

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# Number Sense and Operations

Grade 8		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
NC845	SMMA_ LO_01123	Estimation	Estimate Products/Quotients Using Compatible Numbers	Identify the best estimate for a quotient or a product using compatible numbers (factors less than 10 with two to four decimal places, divisors less than 10 with two to three decimal places).
NC875	SMMA_ LO_02141	Number Sense	Order Rational and Irrational Numbers	Drag rational and irrational values to their correct positions on a number line.
NC881	SMMA_ LO_02282	Number Sense	Order Rational and Irrational Numbers	Use an iterative process to estimate the value of a square root to the nearest tenth.
NC840	SMMA_ LO_01116	Number Sense	Compare Fractions, Decimals, and Percents	Identify a number not equivalent to four others.
AP845	SMMA_ LO_02073	Number Sense	Ratios and Proportions	Graph proportional relationships and interpret the unit rate as the slope of the graph.
AP850	SMMA_ LO_02074	Number Sense	Ratios and Proportions	Compare a proportional relationship represented as a graph to a proportional relationship represented as a table.

Grade 8		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
WP840	SMMA_ LO_01635	Number Sense	Ratios and Proportions	Solve a problem in context using proportions.
AP881	SMMA_ LO_02289	Number Sense	Ratios and Proportions	Identify a unit rate from a graph. Compare that unit rate to a unit rate given in an equation.
AP835	SMMA_ LO_02070	Number Sense	Scientific Notation	Write very small numbers in scientific notation.
AP840	SMMA_ LO_02071	Number Sense	Scientific Notation	Write very large numbers in scientific notation.
WP830	SMMA_ LO_02072	Number Sense	Scientific Notation	Compare numbers written in scientific notation.
EQ807	SMMA_ LO_01113	Number Sense	Scientific Notation	Express a number in scientific notation (exponents 1 to 6).
EQ815	SMMA_ LO_01121	Number Sense	Scientific Notation	Given the scientific notation, determine the standard notation of a number (the power of 10 has an exponent of 1 to 6).

Grade 8		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
EQ822	SMMA_ LO_01122	Number Sense	Scientific Notation	Find the missing exponent for a number written in scientific notation (the exponent is 1 to 6).
AP841	SMMA_ LO_02286	Number Sense	Scientific Notation	Estimate two very large or very small numbers using scientific notation. Compare the numbers by using the estimates.
AP842	SMMA_ LO_02287	Number Sense	Scientific Notation	Perform operations with numbers given in scientific notation.
AP843	SMMA_ LO_02288	Number Sense	Scientific Notation	Interpret scientific notation that has been generated by technology.
WP875	SMMA_ LO_01639	Number Sense	Sequence Numbers	Find three consecutive integers when given their sum.
ME825	SMMA_ LO_00846	Number Sense	Solve Ratios/Proportions in Measurement Context	Interpret scale drawings (metric and customary units of length).
EQ800	SMMA_ LO_01120	Number Sense	Squares and Square Roots	Find the square root of a number using a calculator (numbers to 4000).



Grade 8		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
EQ802	SMMA_ LO_02284	Number Sense	Squares and Square Roots	Solve equations by taking the square or cube root of a number.
EQ804	SMMA_ LO_02285	Number Sense	Squares and Square Roots	Calculate the square root of small perfect squares (within 144) and cube roots of small perfect cubes (within 125).
NC893	SMMA_ LO_02178	Number Sense	Rational and Irrational Numbers	Identify irrational numbers.
NC851	SMMA_ LO_02279	Number Sense	Rational and Irrational Numbers	Rewrite terminating decimals in simplest fraction form.
DC800	SMMA_ LO_02280	Number Sense	Rational and Irrational Numbers	Rewrite fractions as terminating or repeating decimals.
NC880	SMMA_ LO_02281	Number Sense	Rational and Irrational Numbers	Find decimal approximations of expressions including irrational numbers (all four operations).

Grade 8		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
EQ892	SMMA_ LO_02275	Number Sense	Identify Equivalent Expressions Using Dis- tributive Property of Mul- tiplication	Apply the properties of operations to multiply two linear expres- sions.
WP850	SMMA_ LO_01636	Operations with Numbers	Determine Percent	Find the number of grams that represents a percentage of the total weight (whole numbers).
DV800	SMMA_ LO_00316	Operations with Numbers	Divide Integers	Divide integers (combinations 6 x 10 to -9 x 12, dividend or divisor is negative).
DV825	SMMA_ LO_00317	Operations with Numbers	Divide Integers	Divide integers (combinations 4 x 6 to 12 x 12).
DV850	SMMA_ LO_00319	Operations with Numbers	Divide Integers	Divide integers (combinations 6 x 13 to 9 x 19, all signs).
DV875	SMMA_ LO_00320	Operations with Numbers	Multiply/Divide Integers to Determine Missing Dividend/Divisor	Find the missing dividend or divisor in a number sentence (com- binations 7 x 13 to 9 x 19, all signs).

Grade 8		Strand: Number Sense and Operations		
MCS* Level	LO ID	Concept	Topic	Description
AP880	SMMA_ LO_00178	Operations with Numbers	Solve Percent Problems Involving Money	Find the total cost, given an amount and the sales tax percentage.
WP860	SMMA_ LO_01637	Operations with Numbers	Solve Percent Problems Involving Money	Find total earnings for two to four weeks given the weekly salary, commission percentage, and total sales (whole number percents).
WP825	SMMA_ LO_01634	Operations with Numbers	Subtract Fractions	Subtract two fractions from a whole within a context.
NC800	SMMA_ LO_01104	Number Theory	Prime Factorization	Multiply or divide two numbers with exponents (same base, exponents less than 18).
NC825	SMMA_ LO_01111	Number Theory	Prime Factorization	Find the missing exponent in a multiplication or division number sentence.

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# Patterns, Algebra, and Functions

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ830	SMMA_ LO_02145	Multi-Step Equations	Solve Multi-Step Equations	Generate and solve an equation with variables on both sides of the equal sign in a real-world context.
EQ827	SMMA_ LO_02294	Multi-Step Equations	Solve Multi-Step Equations	Solve linear equations with rational number coefficients that require expanding expressions and combining like terms.
EQ825	SMMA_ LO_02295	Multi-Step Equations	Solve Multi-Step Equations	Solve linear equations with one rational coefficients that require expanding expressions and collecting like terms.
EQ860	SMMA_ LO_01828	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify if an equation is a linear or exponential function.
EQ867	SMMA_ LO_01829	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify if an equation is a linear or quadratic function.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP820	SMMA_ LO_01830	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify whether graphs are linear or exponential.
AP855	SMMA_ LO_01831	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify whether graphs are linear or quadratic.
AP870	SMMA_ LO_01832	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify whether graphs are linear or nonlinear.
EQ875	SMMA_ LO_01833	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify if an equation is a linear or nonlinear function.
AP885	SMMA_ LO_01834	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Determine if a table values represents a linear or nonlinear function.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP860	SMMA_ LO_01881	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Determine if a table values represents a linear or exponential function.
AP865	SMMA_ LO_01882	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Determine if a table values represents a linear or quadratic function.
AP875	SMMA_ LO_01883	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Identify the function that is represented by a table of values (linear and nonlinear).
EQ885	SMMA_ LO_02303	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Select the equation that best represents a given linear graph.
PS875	SMMA_ LO_02305	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Determine whether a given graph is decreasing or increasing and if it is linear or non-linear.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS885	SMMA_ LO_02306	Functions and Relations	Distinguish between Linear and Nonlinear Functions	Determine what graphs are linear or non-linear and decreasing or increasing.
AP890	SMMA_ LO_01836	Functions and Relations	Generate a Table for an Equation and Graph	Complete a table of values and graph the equation of a linear function.
AP895	SMMA_ LO_01837	Functions and Relations	Generate a Table for an Equation and Graph	Complete a table of values and graph the equation of a linear function.
AP810	SMMA_ LO_01811	Functions and Relations	Distinguish between a Function and a Relation	Given a list of ordered pairs of a relation, identify two ordered pairs that show the relation is not a function.
AP812	SMMA_ LO_01812	Functions and Relations	Distinguish between a Function and a Relation	Given a graph of a relation, identify two ordered pairs on the graph that show the relation is not a function.
PS800	SMMA_ LO_02301	Functions and Relations	Distinguish between a Function and a Relation	Enter values in a table, so that the table represents a function.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
AP800	SMMA_ LO_01806	Functions and Relations	Generate a Table Given a Rule	Complete an input/output table and identify the algebraic equation that describes the one-step rule.
AP805	SMMA_ LO_01807	Functions and Relations	Generate a Table Given a Rule	Complete an input/output table and identify the algebraic equation that describes the two-step rule.
AP815	SMMA_ LO_01835	Functions and Relations	Identify Graphs That Represent Functions	Given a set of graphs of relations, identify which graphs represent functions.
NC850	SMMA_ LO_02101	Functions and Relations	Compare Functions	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.
NC860	SMMA_ LO_02102	Functions and Relations	Compare Functions	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.
NC870	SMMA_ LO_02103	Functions and Relations	Compare Functions	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.



Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
PS850	SMMA_ LO_02302	Functions and Relations	Compare Functions	Draw conclusions about the slope and y-intercept of two functions; one represented by a table and another by an equation.
ME880	SMMA_ LO_02075	Functions and Relations	Linear Equations	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.
ME890	SMMA_ LO_02076	Functions and Relations	Linear Equations	Derive the equation $y = mx$ for a line through the origin, and $y = mx + b$ for a line intercepting the vertical axis at $b$ .
EQ840	SMMA_ LO_02290	Functions and Relations	Linear Equations	Use two similar triangles drawn on a linear graph to show that the slope between any two points on a linear graph is the same.
EQ850	SMMA_ LO_02291	Functions and Relations	Linear Equations	Use similar triangles to derive the equation $y = mx + b$ .
EQ895	SMMA_ LO_02080	Functions and Relations	Systems of Linear Equations	Identify the solution to a system of linear equations by locating the point of intersection on its graph.
EQ870	SMMA_ LO_02296	Functions and Relations	Systems of Linear Equations	Graph systems of equations and then use the intersection point to find the solution to the system of equations.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
GE805	SMMA_LO_00649	Logical Reasoning	Identify the Counter-example	Identify the figure that is not similar to the others. (simple shapes, counterexample).
EQ820	SMMA_LO_01847	One-Step Equations	Solve One-Step Equations Involving Fractions	Solve a one-step equation (fractions, multiplication and division).
WP810	SMMA_LO_01632	Open Sentences	Construct Equations from Context	Find the final temperature given the initial temperature and the temperature increase.
AP830	SMMA_LO_01840	Patterns	Extend an Iterative Pattern	Identify the rule for an iterative pattern.
EQ845	SMMA_LO_01682	Patterns	Identify the Rule of the Function	Determine the rate of change, and construct a function to model a linear relationship between two quantities.
EQ848	SMMA_LO_01684	Patterns	Identify the Rule of the Function	Determine the rate of change, and construct a function to model a linear relationship between two quantities.
PS825	SMMA_LO_02304	Patterns	Identify the Rule of the Function	Determine the slope and intercept of a given linear graph.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ871	SMMA_ LO_00397	Two-Step Equations	Determine if the Given Values Solve the Equa- tion	Determine whether a given value for x is a solution for $ax + b = c$ (x is from -9 to 9).
EQ881	SMMA_ LO_00398	Two-Step Equations	Determine if the Given Values Solve the Equa- tion	Determine whether the given values for x and y satisfy $y = ax + b$ .
EQ890	SMMA_ LO_00399	Two-Step Equations	Determine if the Given Values Solve the Equa- tion	Given a table of values for x and y, identify a true equation.
WP800	SMMA_ LO_01631	Two-Step Equations	Solve a Two-Step Prob- lem in Context	Solve a two-step addition problem to find a person-s age in 5 to 20 years from now.
WP820	SMMA_ LO_01633	Two-Step Equations	Solve a Two-Step Prob- lem in Context	Solve a two-step multiplication and addition problem in context.
WP870	SMMA_ LO_01638	Two-Step Equations	Solve a Two-Step Prob- lem in Context	Solve for a two-step equation in context.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ810	SMMA_LO_00377	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve for a, b, c, or d in $a/b \cdot c/d = e/f$ .
WP880	SMMA_LO_01640	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Add two fractional parts of whole numbers in context.
EQ805	SMMA_LO_01850	Two-Step Equations	Solve Two-Step Equations Involving Fractions	Solve a two-step equation (fractions, multiplication).
EQ882	SMMA_LO_02133	Written Equations	Systems of Linear Equations	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.
WP890	SMMA_LO_02134	Written Equations	Systems of Linear Equations	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.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ878	SMMA_LO_02297	Written Equations	Systems of Linear Equations	Graph systems of equations and then estimate the solution to the system of equation.
EQ880	SMMA_LO_02298	Written Equations	Systems of Linear Equations	Solve systems of two linear equations for x and y.
WP892	SMMA_LO_02299	Written Equations	Systems of Linear Equations	Represent real-world problems with two linear equations in two variables.
AP883	SMMA_LO_02300	Written Equations	Systems of Linear Equations	Determine whether lines through given points intersect, do not intersect, or overlap.
EQ837	SMMA_LO_02079	Written Equations	Solve Multi-Step Equations	Transform a given multi-step equation into a simpler form.
EQ838	SMMA_LO_02292	Written Equations	Solve Multi-Step Equations	Identify which equations have one solution, no solutions, or infinitely many solutions.
EQ839	SMMA_LO_02293	Written Equations	Solve Multi-Step Equations	Solve equations to determine whether the equation has one solution, no solutions, or infinitely many solutions.

Grade 8		Strand: Patterns, Algebra, and Functions		
MCS* Level	LO ID	Concept	Topic	Description
EQ891	SMMA_ LO_02274	Expressions	Evaluate Expressions with Exponents	Apply the law of exponents to choose an equivalent algebraic expression.
AP831	SMMA_ LO_02283	Expressions	Evaluate Expressions with Exponents	Apply properties of integer exponents to identify equivalent numerical expressions.
EQ893	SMMA_ LO_02276	Simplify Expressions	Simplify Expressions by Factoring and Combining Like Terms	Factor an expression.
EQ853	SMMA_ LO_02277	Written Inequalities	Solve and Graph a Linear Inequality in One Variable	Solve two-step linear inequalities algebraically.

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## Speed Games (Fluency)

Grade 8		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG810	SMMA_SG_00810	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 50.
SG820	SMMA_SG_00820	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 100.
SG840	SMMA_SG_00840	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 100.
SG880	SMMA_SG_00880	Operations with Numbers	Divide Using Basic Math Facts	Practice division using basic facts; dividend, divisor less than or equal to 100.
SG830	SMMA_SG_00830	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 144.
SG860	SMMA_SG_00860	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 144.

Grade 8		Strand: Speed Games (Fluency)		
MCS* Level	LO ID	Concept	Topic	Description
SG870	SMMA_SG_00870	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 144.
SG890	SMMA_SG_00890	Operations with Numbers	Multiply Using Basic Math Facts	Practice multiplication using basic facts; products less than or equal to 144.

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## Probability and Discrete Mathematics

Grade 8		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR800	SMMA_LO_01215	Probability	Determine the Probability of Independent Events	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.



Grade 8		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR825	SMMA_ LO_01219	Probability	Determine the Sample Space for an Event (Dice)	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.
PR820	SMMA_ LO_01218	Probability	Determine the Sample Space for an Event (Dice)	Given a coordinate grid to represent outcomes of tossing a pair of number cubes, identify the point that represents a given pair of outcomes.
PR880	SMMA_ LO_01224	Probability	Determine the Probability of Simultaneously-Occurring Independent Events	Identify the probability of two independent outcomes, and then determine the probability of the combination of the two outcomes occurring simultaneously.
PR810	SMMA_ LO_01216	Probability	Determine the Probability of Dependent Events	Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible.

Grade 8		Strand: Probability and Discrete Mathematics		
MCS* Level	LO ID	Concept	Topic	Description
PR830	SMMA_ LO_01220	Probability	Determine the Probability of Dependent Events	Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible.
PR890	SMMA_ LO_01226	Probability	Determine the Probability of Dependent Events	Within the context of selecting without replacement from a bowl containing marbles of two colors, indicate the effect of changes on the probability of the event in both the number of possible outcomes favorable to an event and the total number of possible.

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## Performance Tasks

Grade 8		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT991	SMMA_ LO_02515	Problem Solving	1. Scientific notation	Student do operations in scientific notations and convert to and from scientific notation.

Grade 8		Strand: Performance Tasks		
MCS* Level	LO ID	Concept	Topic	Description
PT994	SMMA_ LO_02516	Problem Solving	2. Use linear relationships to solve problems in context	Students write, graph, and compare two linear functions.
PT997	SMMA_ LO_02517	Problem Solving	3. Describe the rule in a relation or function	Students write and graph a function from a table, interpreting the slope and x- and y-intercepts.

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