ALABAMA EXTENDED STANDARDS

MATHEMATICS

GRADES K-12

DRAFT,
Pending Final Approval

Thomas R. Bice, State Superintendent of Education • Alabama State Department of Education

October 2013

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Thomas R. Bice, State Superintendent of Education
Alabama State Department of Education

Alabama State Department of Education, Thomas R. Bice, Ed.D., State Superintendent of Education
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ALABAMA EXTENDED STANDARDS: MATHEMATICS

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PREFACE

The Alabama Extended Standards are extensions of the state academic content standards for each grade level. The Alabama Extended Standards are based on the academic content standards found in the Alabama Course of Study. They are designed to allow students with significant cognitive disabilities to progress toward state standards while beginning at each student's present level of performance. As required by law, the Alabama Extended Standards are clearly related to the grade-level content, but are reduced in scope and complexity.

ACKNOWLEDGMENTS

This document was developed by the 2013-2014 Alabama Extended Standards Task Force composed of general education and special education elementary, middle school, high school, and state-agency educators, along with parents, individuals from institutions of higher education, and related service providers. The Task Force began the document during the summer of 2013.

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ORGANIZATION OF THE ALABAMA EXTENDED STANDARDS

<table>
<tr><th>Course of Study</th><th>Extended Standard</th><th colspan="2">Complexity</th></tr>
<tr><td rowspan="4">General Education Standard 3.11

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. [3-NBT2]</td><td rowspan="4">M. ES 3.1

Add one-digit numbers addends up to 5.
Example:
5
+1</td><td>(4)</td><td>Add one-digit numbers with addends up to 9.
Example:
9
+2</td></tr>
<tr><td>(3)</td><td>Add one-digit numbers with addends up to 5.
Example:
5
+1</td></tr>
<tr><td>(2)</td><td>Match one-digit numbers.
Example: Match 1 to 1, 3 to 3</td></tr>
<tr><td>(1)</td><td>Participate in matching one-digit numbers.</td></tr>
</table>

Course of Study
The Course of Study lists the general education standard(s) for each grade level. The Alabama Extended Standards are linked to general education grade level content. The general education standard is provided as a reference.

Extended Standard
The Alabama Extended Standards are the academic content for students with significant cognitive disabilities. These standards define what students with significant cognitive disabilities are expected to know and be able to do.

Complexity
The extended standards are divided into four levels of complexity, with four being the most complex and one being the least complex.

When developing goals and planning instruction, strive for the highest level of complexity that the student can achieve. Complexity 3 is the same as the extended standard. Always begin by considering complexity 3. If the student is unable to work at complexity 3, consider complexity 2, then 1. Complexity 4 should be considered for any student who has achieved complexity 3 or above.

Examples
Examples are illustrative, but are not exhaustive. For instance, if the Example suggests the student do something during show and tell or circle time, and the student is homebound, the skill could just as appropriately be demonstrated in a specially designed activity in the home.

Augmentative/Alternative Devices
The Alabama Extended Standards are to be completed using the student's communication modality (e.g., voice, sign language, augmentative/alternative communication device). This does not mean an augmentative/alternative device should be programmed to do the cognition for the student. Four complexities are provided for each standard to accommodate a wide range of student needs.

Alabama Extended Standards

MATHEMATICS

Grades K-12

Kindergarten

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard K.1 Count to 100 by ones and by tens. [K-CC1]	**M. ES K.1** **Count by ones to 3.**	(4)	Count by ones to 10.
		(3)	Count by ones to 3.
		(2)	Imitate counting by ones to 3.
		(1)	Attend to someone counting.
General Education Standard K.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). [K-CC3]	**M. ES K.2** **Recognize numbers 1-3.**	(4)	Recognize numbers 1-10.
		(3)	Recognize numbers 1-3.
		(2)	Recognize a number.
		(1)	Interact with tactile numbers.
General Education Standard K.14 Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object. [K-MD1]	**M. ES K.3** **Compare two objects by size.** **Examples: Shorter, longer, bigger, smaller, lighter, heavier**	(4)	Sort objects by size. Examples: Sort big and small; Sort heavy and light; Sort long and short
		(3)	Compare two objects by size. Examples: Shorter, longer, bigger, smaller, lighter, heavier
		(2)	Identify objects by size. Examples: Correctly use terms such as short, tall, little, big, small, light, heavy
		(1)	Respond or react as teacher identifies objects of different sizes and weights.

1st Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 1.9 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. [1-NBT1]	**M. ES 1.1** **Count by ones to 10 and identify numbers 1-10.**	(4)	Count by ones and fives to 20 and identify numbers 1-20.
		(3)	Count by ones to 10 and identify numbers 1-10.
		(2)	Imitate counting by ones to 10.
		(1)	Mimic number songs or counting activities. Example: Mimic number songs with action or speech
General Education Standard 1.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. (See Appendix A, Table 1.) [1-OA1]	**M. ES 1.2** **Create groups that show one-to-one correspondence using groups of concrete items and pictures or tactile representations.** **Examples: Place 3 stuffed animals with a picture of 3 stuffed animals when given numerous stuffed animals and a picture of 3 stuffed animals; Match 2 blocks to a picture of two blocks when given 2 blocks and a picture of 1 block, a picture of 2 blocks, and a picture of 3 blocks**	(4)	Create groups that are matched one-to-one using unlike, concrete objects. Example: Create a group of 3 blocks and a group of 3 stuffed animals
		(3)	Create groups that show one-to-one correspondence using groups of concrete items and pictures or tactile representations. Examples: Place 3 stuffed animals with a picture of 3 stuffed animals when given numerous stuffed animals and a picture of 3 stuffed animals; Match 2 blocks to a picture of two blocks when given 2 blocks and a picture of 1 block, a picture of 2 blocks, and a picture of 3 blocks
		(2)	Imitate to create groups that are matched one-to-one using like, concrete objects. Example: Create a group of 3 blocks after the teacher creates a group of 3 blocks
		(1)	Participate in creating groups that are matched one-to-one using like, concrete objects.
General Education Standard 1.17	**M. ES 1.3** **Recognize vocabulary related to the concept of time.**	(4)	Use vocabulary related to the concept of time. Examples: Clock, watch, morning, day, night, before, after, later

Course of Study	Extended Standard	Complexity	
Tell and write time in hours and half-hours using analog and digital clocks. [1-MD3]	**Examples: Provide a fitting response when someone uses the words clock, watch, day, or night in a sentence or a question**	(3)	Recognize vocabulary related to the concept of time. Examples: Provide a fitting response when someone uses the words clock, watch, day, or night in a sentence or a question
		(2)	Identify a picture or tactile representation related to vocabulary associated with the concept of time. Examples: Identify a watch; Identify a picture of night time; Identify a picture of daylight
		(1)	Respond or react to events centered on time. Example: Squeal with delight when the teacher says it is time to go home

2nd Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 2.6 Count within 1000; skip-count by 5s, 10s, and 100s. [2-NBT2]	**M. ES 2.1** **Count by ones to 20 and identify numbers 1-20.**	(4)	Count by ones and fives to 50, and by 10s to 100 and identify numbers 1-50.
		(3)	Count by ones to 20 and identify numbers 1-20.
		(2)	Imitate counting by ones to 20.
		(1)	Respond to counting to 3. Example: Open mouth on the count of 3
General Education Standard 2.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See Appendix A, Table 1). [2-OA1]	**M. ES 2.2** **Demonstrate addition and subtraction by separating or joining sets of objects. Example: Take 3 objects from a group of objects when directed; Add 2 objects to a group when directed**	(4)	Demonstrate addition and subtraction by separating or joining sets of objects and reporting answer. Example: Use objects to model 2+2 and report 4 as the answer
		(3)	Demonstrate addition and subtraction by separating or joining sets of objects. Examples: Take 3 objects from a group of objects when directed; Add 2 objects to a group when directed
		(2)	Demonstrate addition and subtraction by imitating adding to or taking away from a group of objects. Example: Add 3 counters to a group of counters after the teacher adds 3 counters to a group of counters
		(1)	Request objects be added or taken away from a group. Example: Request more or less blocks
General Education Standard 2.20 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. [2-MD7]	**M. ES 2.3** **Identify time to the hour using a digital clock.**	(4)	Identify time to the hour using an analog clock.
		(3)	Identify time to the hour using a digital clock.
		(2)	Identify parts of a digital or analog clock. Example: Identify numbers and the face

Course of Study	Extended Standard	Complexity	
		(1)	Identify an analog clock. Example: Eye gaze or touch an analog clock when shown an analog clock and something else

3rd Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 3.11 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. [3-NBT2]	**M. ES 3.1** **Add one-digit numbers addends up to 5.** **Example:** **5** **+1**	(4)	Add one-digit numbers with addends up to 9. Example: 9 +2
		(3)	Add one-digit numbers with addends up to 5. Example: 5 +1
		(2)	Match one-digit numbers. Example: Match 1 to 1, 3 to 3
		(1)	Participate in matching one-digit numbers.
General Education Standard 3.11 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. [3-NBT2]	**M. ES 3.2** **Subtract one-digit numbers with minuends up to 5.** **Example:** **5** **-1**	(4)	Subtract one-digit numbers with minuends up to 9. Example: 9 -4
		(3)	Subtract one-digit numbers with minuends up to 5. Example: 5 -1
		(2)	Identify one-digit numbers. Example: Identify numbers 1-5
		(1)	Identify the number of objects to remove from a set. Example: Choose the number of blocks to take away from 5 blocks
General Education Standard 3.16 Tell and write time to the nearest minute, and measure time intervals in minutes. Solve word problems	**M. ES 3.3** **Identify time to the half hour using digital clock.**	(4)	Identify time to the half hour using analog clock.
		(3)	Identify time to the half hour using digital clock.
		(2)	Match digital clock time to the hour. Example: Match 1:00 to 1:00

Course of Study	Extended Standard	Complexity	
involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. [3-MD1]		(1)	Identify a digital clock. Example: Eye gaze or touch a digital clock when shown a digital clock and something else

4th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 4.9 Fluently add and subtract multi-digit whole numbers using the standard algorithm. [4-NBT4]	**M. ES 4.1** **Add a one-digit number to a two digit number *without* regrouping.** **Example:** **12** **+4**	(4)	Add a one-digit number to a two digit number *with* regrouping. Example: Add 15 +6
		(3)	Add a one-digit number to a two digit number *without* regrouping. Example: Add 12 +4
		(2)	Match two-digit numbers. Example: Match 21 to 21 and 33 to 33
		(1)	Identify a one-digit number. Example: Eye gaze or touch a tactile one-digit number when shown a tactile one-digit number and something else
General Education Standard 4.9 Fluently add and subtract multi-digit whole numbers using the standard algorithm. [4-NBT4]	**M. ES 4.2** **Subtract a one-digit number from a two-digit number *without* regrouping.** **Example:** **14** **-2**	(4)	Subtract a one-digit number from a two-digit number *with* regrouping. Example: 35 -6
		(3)	Subtract a one-digit number from a two-digit number *without* regrouping. Example: 14 -2
		(2)	Match subtraction facts that include the answer. Example: Match 2-2=0 to 2-2=0
		(1)	Participate in matching subtraction facts.
General Education Standard 4.20 Use the four operations to solve word problems involving distances, intervals	**M. ES 4.3** **Identify coins and their value including penny, nickel, dime and quarter.**	(4)	Count like sets of coins.
		(3)	Identify coins and their value including penny, nickel, dime and quarter.
		(2)	Sort pennies, nickels, dimes and quarters.

Course of Study	Extended Standard	Complexity	
of time, liquid volumes, masses of objects and money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		(1)	Distinguish a coin from another object. Example: Eye gaze or touch the coin when shown a coin and something else

5th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 5.7 Use place value understanding to round decimals to any place.	**M. ES 5.1** **Recognize bills including $1.00, $5.00, and $20.00.** **Example: Identify the five dollar bill when given 3 bills and asked which one is a five dollar bill**	(4)	Identify $1.00, $5.00, $10.00, and $20.00 bills and skip count five dollar bills by 5s and ten dollar bills by 10s.
		(3)	Recognize bills including $1.00, $5.00, and $20.00. Example: Identify the five dollar bill when given 3 bills and asked which one is a five dollar bill
		(2)	Sort two different type bills. Example: Sort $1.00 and $5.00 bills
		(1)	Distinguish a bill from another object. Example: Eye gaze or touch the bill when shown a bill and something else
General Education Standard 5.8 Fluently multiply multi-digit whole numbers using the standard algorithm. [5-NBT5]	**M. ES 5.2** **Replicate groups of objects when given a multiplication fact.** **Example: Place two objects 4 times to demonstrate 2x4.**	(4)	Recall multiplication facts for 1's and 2's.
		(3)	Replicate groups of objects when given a multiplication fact. Example: Place two objects 4 times to demonstrate 2x4
		(2)	Imitate replicating groups of objects to demonstrate multiplication. Example: Create four groups of two objects after teacher creates four groups of two objects to demonstrate 2x4.
		(1)	Participate in replicating groups of objects to demonstrate multiplication.
General Education Standard 5.11 Add and subtract fractions with unlike denominators (including mixed numbers)	**M. ES 5.3** **Identify fractional representations for ½, 1/3, and ¼.**	(4)	Label fractional representations for halves, thirds, and fourths. Example: Label a shaded circle as ¾
		(3)	Identify fractional representations for ½, 1/3, and ¼.

Course of Study	Extended Standard	Complexity	
by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. [5-NF1]		(2)	Match pieces to a fractional representation. Example: Match one small square to a larger square where the shaded part on the larger square is shaded for ¼; Match three small squares to a larger square divided into ¾
		(1)	Distinguish half and whole. Example: Distinguish half of an apple from a whole apple

6th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 6.6 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. [6-NS3]	**M. ES 6.1** **Add one- and two-digit numbers to two-digit numbers *without* regrouping.** **Examples:** **14 32** **+ 2 +22**	(4)	Add one- and two-digit numbers to two-digit numbers *with* regrouping. Examples: 26 49 + 7 +14
		(3)	Add one- and two-digit numbers to two-digit numbers *without* regrouping. Examples: 14 32 + 2 +22
		(2)	Add one-digit numbers. Example: 4 +2
		(1)	Identify a plus sign. Example: Eye gaze or touch a picture or tactile representation of a plus sign when shown a plus sign and something else
General Education Standard 6.6 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. [6-NS3]	**M. ES 6.2** **Subtract one- and two-digit numbers from two digit numbers without regrouping.** **Examples:** **26 42** **- 3 -12**	(4)	Subtract a two-digit number from a two-digit number *with* regrouping. Examples: 24 52 - 6 -14
		(3)	Subtract one- and two-digit numbers from two digit numbers *without* regrouping. Examples: 26 42 - 3 -12
		(2)	Subtract one-digit numbers. Example: 4 -1
		(1)	Identify a minus sign. Example: Eye gaze or touch a picture or tactile representation of a minus sign when shown a minus sign and something else.

Course of Study	Extended Standard	Complexity	
General Education Standard 6.6 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. [6-NS3]	**M. ES 6.3** **Identify multiplication facts for 1's through 9's using a multiplication table.** **Example: Use a multiplication table to solve real life problems**	(4)	Recall multiplication facts for 1's, 2's, 3's, 4's, 5's and 10's. Example: Apply basic operations to solve real life multiplication problems
		(3)	Identify multiplication facts for 1's through 9's using a multiplication table. Example: Use a multiplication table to solve real life problems
		(2)	Match multiplication facts that include the answer. Example: Match flash card for 2 times 2 equals 4 to flash card for 2 times 2 equals 4
		(1)	Participate in matching multiplication facts that include the answer.

7th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard 7.5 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. [7-NS2]	**M. ES 7. 1** **Demonstrate division without remainders by dividing objects into equal groups with divisors 2, 3, 4, 5, and 10.**	(4)	Solve simple division problems without remainders. Example: Apply basic operations to solve real life division problems with one-digit divisors and two-digit dividends such as 10 divided by 2
		(3)	Demonstrate division without remainders by dividing objects into equal groups with divisors of 2, 3, 4, 5, and 10.
		(2)	Separate objects into two equal groups.
		(1)	Identify objects divided into two groups. Example: Eye gaze or touch the divided group of objects when shown a divided group and a group not divided
General Education Standard 7.6 Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions). [7-NS3]	**M. ES 7.2** **Solve simple addition or subtraction word problems (using a calculator if necessary).** **Example: Solve *There are 3 cups on the table. Joan puts 2 more cups on the table. How many cups are on the table?***	(4)	Solve simple multiplication or division word problems (using a calculator if necessary). Example: Solve *There are 8 apples in the box. The apples will be evenly split between Sally and Kendra. How many apples will each girl get?*
		(3)	Solve simple addition or subtraction word problems (using a calculator if necessary). Example: Solve *There are 3 cups on the table. Joan puts 2 more cups on the table. How many cups are on the table?*
		(2)	Solve picture problems with pre-printed counters recording the answer on paper or orally. Example: Solve ☺☺ + ☺☺☺ = ; Solve | | | | + | | | =
		(1)	Identify an object used in a word problem. Example: Eye gaze or touch the pencils when shown pencils and something else

Course of Study	Extended Standard	Complexity	
General Education Standard 7.7 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. [7-EE1]	**M. ES 7.3** **Solve multi-step addition problems.** **Examples: Solve 2+7+3=; 3+4+6=**	(4)	Solve multi-step addition and subtraction problems. Examples: Solve 2+7-3=; 3+4+6=; 10-4-3=
		(3)	Solve multi-step addition problems. Examples: Solve 2+7+3=; 3+4+6=
		(2)	Solve a single-step addition problem. Example: Solve 2+7=
		(1)	Participate in solving a single-step addition problem.

8th Grade

Mathematics

<table>
<tr><th>Course of Study</th><th>Extended Standard</th><th colspan="2">Complexity</th></tr>
<tr><td rowspan="4">General Education Standard 8.5

Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. [8-EE3]</td><td rowspan="4">M. ES 8.1

Create a model for a two- or three-digit numeral.
Example: Create a model for a two-digit numeral using base-ten blocks or base-ten blocks images</td><td>(4)</td><td>Write two-and three-digit numbers in standard form from a model.
Example: Write a two-digit number from base-ten blocks or a base-ten blocks image</td></tr>
<tr><td>(3)</td><td>Create a model for a two- or three-digit numeral.
Example: Create a model for a two-digit numeral using base-ten blocks or base-ten blocks images</td></tr>
<tr><td>(2)</td><td>Match number models.
Examples: Match three ones to three ones using base-ten blocks or base-ten blocks image; Match one ten and four ones to one ten and four ones base-ten blocks or base-ten blocks image</td></tr>
<tr><td>(1)</td><td>Identify base-ten ones.
Example: Eye gaze or touch ones when shown base-ten blocks or base-ten blocks image for ones and tens</td></tr>
<tr><td>General Education Standard 8.11

Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8). [8-F1]</td><td>M. ES 8.2

Continue a pattern when given the rule.
Examples:
Rule: Add 3

0 3 ___ ___ ___

Rule:
Each car washed = $2.00
<table>
<tr><th>Cars Washed</th><th>Money Raised</th></tr>
<tr><td>1</td><td>$2</td></tr>
<tr><td>2</td><td></td></tr>
<tr><td>3</td><td>$6</td></tr>
<tr><td>4</td><td></td></tr>
<tr><td>5</td><td></td></tr>
</table></td><td>(4)</td><td>Determine the rule that defines a pattern.
Examples:
0 3 6 9 12

(Rule: Add 3)

<table>
<tr><th>Cars Washed</th><th>Money Raised</th></tr>
<tr><td>1</td><td>2.00</td></tr>
<tr><td>2</td><td>4.00</td></tr>
<tr><td>3</td><td>6.00</td></tr>
<tr><td>4</td><td>8.00</td></tr>
<tr><td>5</td><td>10.00</td></tr>
</table>
(Rule: Each car washed equals $2)
Note: Rule can be verbalized in simple terms as long as correct rule is identified.</td></tr>
</table>

<table>
<tr><th>Course of Study</th><th>Extended Standard</th><th colspan="2">Complexity</th></tr>
<tr><td rowspan="3"></td><td rowspan="3"></td><td>(3)</td><td>Continue a pattern when given the rule.
Examples:

Rule: Add 3

0 3 ___ ___ ___

Rule:
Each car washed = $2.00
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<tr><td>(2)</td><td>Continue a pattern increasing by one.
Examples:
Continue the pattern:
4 5 6 ___ ___

1 2 ___ ___ ___</td></tr>
<tr><td>(1)</td><td>Identify a pattern of objects or shapes.
Example: Eye gaze or touch the pattern of shapes when shown a pattern of shapes and something else</td></tr>
<tr><td rowspan="2">General Education Standard 8.9

Solve linear equations in one variable. [8-EE7]</td><td rowspan="2">M. ES 8.3

Express a simple number sentence with objects, including the answer. Example: Demonstrate 2+7= by setting out two blocks, + symbol, seven blocks, = symbol, and nine blocks</td><td>(4)</td><td>Solve equations with one variable.
Example:
2+x =
x=1

Answer:
2+1= 3</td></tr>
<tr><td>(3)</td><td>Express a simple number sentence with objects, including the answer.
Example: Demonstrate 2+7= by setting out two blocks, + symbol, seven blocks, = symbol, and nine blocks</td></tr>
</table>

Course of Study	Extended Standard	Complexity	
		(2)	Duplicate a group of objects that expresses a simple number sentence.
		(1)	Participate in duplicating a group of objects that expresses a simple number sentence.

9th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard Algebra I. 27 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.** [F-IF4]	**M. ES 9.1** **Identify positive numbers on a number line with positive and negative numbers.** **Example: Identify 4 on a number line**	(4)	Identify positive and negative numbers on a number line with positive and negative numbers. Example: Identify -2 and 4 on a number line
		(3)	Identify positive numbers on a number line with positive and negative numbers. Example: Identify 4 on a number line
		(2)	Identify a positive number. Example: Choose the positive number when shown a positive number and a negative number
		(1)	Identify numbers. Example: Eye gaze or touch tactile numbers when shown tactile numbers and something else
General Education Standard Algebra I. 44 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. [S-ID5]	**M. ES 9.2** **Record data for at least two categories in a table, chart, or picture graph.** **Example: Record hash marks on a T chart regarding preference of classmates for cake or cookies**	(4)	Collect and report data for at least two categories in a table or chart. Example: Survey classmates, record data, and report findings for a class decision on what to cook on Friday
		(3)	Record data for at least two categories in a table, chart, or picture graph. Example: Record hash marks on a T chart regarding preference of classmates for cake or cookies
		(2)	Identify data from a table, chart, or picture graph. Example: Answer questions about data from a picture graph for favorite ice cream flavors of classmates
		(1)	Participate in collecting data for at least two categories in a table or chart.

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General Education Standard Geometry. 33 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.* [G-GPE7]	**M. ES 9.3** **Determine perimeter of a rectangle, triangle or square when given the dimensions.**	(4)	Determine perimeter of a rectangle, triangle, or square to the nearest inch. Example: Measure a square to the nearest inch and calculate perimeter
		(3)	Determine perimeter of a rectangle, triangle or square when given the dimensions.
		(2)	Match shapes with the same size perimeter. Example: Match the one inch square to the one inch square when given three squares
		(1)	Identify the perimeter of a specified area. Example: Eye gaze or gesture toward the kitchen area in the home economics classroom when asked where is the kitchen area

10th Grade

Mathematics

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General Education Standard Geometry. 35 Give an informal argument for the formulas for the circumference of a circle; area of a circle; and volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.* [G-GMD1]	**M. ES 10.1** **Compare the length, weight, or volume of two or more objects.** **Example: Compare a 8X8 square baking dish and a 9X13 rectangle baking dish**	(4)	Identify and gather information needed for a specified formula. Examples: Identify and gather information needed to identify Body Mass Index (BMI) after looking at a BMI chart; Identify and gather information needed to determine perimeter of an object or area
		(3)	Compare the length, weight, or volume of two or more objects. Example: Compare a 8X8 square baking dish and a 9X13 rectangle baking dish
		(2)	Match measurement tools to corresponding picture or tactile representation. Example: Match a scale to a picture of a scale, match a tape measure to a picture of a tape measure
		(1)	Identify a scale. Example: Eye gaze or touch the scale when shown a scale and something else
General Education Standard Algebraic Connections. 1 Create algebraic models for application-based problems by developing and solving equations and inequalities, including those involving direct, inverse, and joint variation. Example: The amount of sales tax on a new car is directly proportional to the purchase price of the car. If the sales tax on a $20,500 car is $1,600, what is the	**M. ES 10.2** **Identify an amount based on percentage using a chart.** **Examples: Use a tip chart to identify tip for a meal in a restaurant; Use a 20% off price chart to identify sale price of a piece of clothing**	(4)	Calculate an amount based on percentage (using a calculator if necessary). Example: Calculate sales tax; Calculate tip for a meal; Calculate the sale price of a discounted item
		(3)	Identify an amount based on percentage using a chart. Examples: Use a tip chart to identify tip for a meal in a restaurant; Use a sale price chart to identify sale price of a piece of clothing
		(2)	Match percentages. Example: Match 9% to 9%

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purchase price of a new car that has a sales tax of $3,200? Answer: The purchase price of the new car is $41,000. []		(1)	Participate in matching percentages.
General Education Standard Algebraic Connections. 7 Use analytical, numerical, and graphical methods to make financial and economic decisions, including those involving banking and investments, insurance, personal budgets, credit purchases, recreation, and deceptive and fraudulent pricing and advertising. Examples: Determine the best choice of certificates of deposit, savings accounts, checking accounts, or loans. Compare the costs of fixed- or variable-rate mortgage loans. Compare costs associated with various credit cards. Determine the best cellular telephone plan for a budget. []	**M. ES 10.3** **Compare cost of two items when given the price for each item.** **Example: Identify which cost more between a magazine ($2.00) and a dvd ($15.00)**	(4)	Figure costs related to a practical situation (using a spreadsheet or calculator if necessary). Examples: Figure the costs related to buying 4 presents; Figure the costs for having a spaghetti supper for 3 friends
		(3)	Compare cost of two items when given the price for each item. Example: Identify which cost more between a magazine ($2.00) and a dvd ($15.00)
		(2)	Identify the displayed cost of an item. Example: Identify the price on item, display or in advertisement for a candy bar
		(1)	Identify item being purchased. Example: Eye gaze or touch the candy bar being purchased or mock purchased when shown a candy bar and something else

11th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard Algebraic Connections. 7 Use analytical, numerical, and graphical methods to make financial and economic decisions, including those involving banking and investments, insurance, personal budgets, credit purchases, recreation, and deceptive and fraudulent pricing and advertising. Examples: Determine the best choice of certificates of deposit, savings accounts, checking accounts, or loans. Compare the costs of fixed- or variable-rate mortgage loans. Compare costs associated with various credit cards. Determine the best cellular telephone plan for a budget. []	**M. ES 11.1** **Determine if given amount is sufficient to cover a purchase.** **Examples: Identify if $1.00 is enough to buy a soda from the machine; Identify if money in wallet will cover menu item with tax and tip**	(4)	Demonstrate a financial skill. Examples: Online banking, ATM usage, budgeting, counting money
		(3)	Determine if a given amount is sufficient to cover a purchase. Examples: Identify if $1.00 is enough to buy a soda from the machine; Identify if money in wallet will cover menu item with tax and tip
		(2)	Recognize paper currency value. Example: Show the teacher the one dollar bill when given two bills and asked which is one dollar
		(1)	Distinguish bills from coins. Example: Eye gaze or touch the coins when shown coins and bills and asked which one is coins
General Education Standard Algebraic Connections 7.a Create, manually or with technological tools, graphs and tables related to personal finance and economics. Example: Use spreadsheets to create an amortization table for a mortgage loan or a circle graph for a personal budget. []	**M. ES 11.2** **Record data in a spreadsheet or table.** **Examples: Record expenses, grades, calories consumed, or daily work hours in a spreadsheet or table**	(4)	Demonstrate basic operations of a spreadsheet or table including recording data, adding cells together, and displaying results in graphs.
		(3)	Record data in a spreadsheet or table. Examples: Record expenses, grades, calories consumed, or daily work hours in a spreadsheet or table
		(2)	Recognize data for a spreadsheet or table. Example: Identify list of grades when shown a list of grades and a list of calories eaten for the day when asked which one is grades
		(1)	Participate in recording data in a spreadsheet or table.

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General Education Standard Algebraic Connections. 10 Critique measurements in terms of precision, accuracy, and approximate error. Example: Determine whether one candidate has a significant lead over another candidate when given their current standings in a poll and the margin of error. [ ]	**M. ES 11.3** **Measure length, weight, or volume for a practical situation.** **Examples: Measure to see if a piece of furniture will fit; Measure ingredients for a recipe**	(4)	Evaluate the accuracy of calculated measurements. Examples: Evaluate the accuracy of given measurements for length, weight or volume; Evaluate if the ingredients provided match the measurements for the ingredients specified in the recipe
		(3)	Measure length, weight, or volume for a practical situation. Examples: Measure to see if a piece of furniture will fit; Measure ingredients for a recipe
		(2)	Identify measurement tools needed in a practical situation. Example: Get the measuring cup when asked
		(1)	Identify a tape measure. Example: Eye gaze or touch the tape measure when shown a tape measure and something else

12th Grade

Mathematics

Course of Study	Extended Standard	Complexity	
General Education Standard Algebra II. 14 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.* [A-SSE4] Example: Calculate mortgage payments.	**M. ES 12.1** **Figure weekly work hours using a spreadsheet or calculator.** **Example: Use a calculator to add each day's hours for Monday through Sunday**	(4)	Figure daily, weekly, or monthly work wages using a spreadsheet or calculator. Example: Use a calculator to multiply hours worked times hourly rate
		(3)	Figure weekly work hours using a spreadsheet or calculator. Example: Use a calculator to add each day's hours for Monday through Sunday
		(2)	Log in daily. Examples: Clock in; Sign in for a week
		(1)	Confirm presence. Example: Nod head or gesture during roll call
General Education Standard Algebra II. 27 Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.* [A-REI11]	**M. ES 12.2** **Identify greater than, less than, or equal to when given two one-digit numbers.**	(4)	Identify greater than, less than, or equal to in relation to money. Examples: Identify four quarters is equal to one dollar; Identify seventy-five cents is less than one dollar
		(3)	Identify greater than, less than, or equal to when given two one-digit numbers.
		(2)	Choose between two groups of objects in terms of greater than or less than.
		(1)	Choose the largest object from a group of two. Example: Eye gaze or touch the cardboard box when shown a large box and a toothbrush

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General Education Standard Algebra II. 42 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. [S-CP5]	**M. ES 12.3** **Predict the chance of an event happening using data and the terms likely, unlikely and impossible. Examples: Predict if football team A is likely to beat football team B by looking at each team's win/lose record for the year**	(4)	Explain a probability event. Examples: Explain that because there are more red marbles in a bag, there is a greater probability of picking that color; Explain that there are fewer boys in the class so there is less of a chance that a boy's name will be drawn from a hat; Explain that team A won 8 games, while team B won 2 games, making team A more likely to win if the two play each other
		(3)	Predict the chance of an event happening using data and the terms likely, unlikely and impossible. Examples: Predict if football team A is likely to beat football team B by looking at each team's win/lose record for the year
		(2)	Predict the chance of an event happening using the terms never, sometimes and always. Example: Use the terms never, sometimes and always to answer questions such as "Do you have PE class after lunch" or "Will you have dinner with a dragon"
		(1)	Participate in predicting the chance of an event happening.