AIMSweb®

Math Instructional Recommendations Guide: Common Core

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Introduction

AIMSweb is an assessment, reporting, and data management system for use with Kindergarten through Grade 12. Designed for benchmarking and monitoring student progress, it provides users with the framework and data necessary for response to intervention (RTI) and multi-tiered intervention. Built on curriculum-based measurement (CBM) practices, AIMSweb comprises brief, reliable, and valid general outcome measures of basic reading, language arts, and math skills. These measures facilitate the efficient and accurate evaluation of student progress relative to performance targets, regardless of curriculum or intervention.

Performance on the AIMSweb probes is an indicator of students' overall competence in a domain (e.g., math skills), as opposed to mastery tests used to measure performance of specific skills. Schools use AIMSweb benchmark probes to screen all students three times a year, to identify at-risk students as early as possible, and to determine the intensity of intervention needed to move these at-risk students to meet on-grade level performance expectations. For students receiving intervention, schools can use AIMSweb to frequently monitor their progress and ensure that these students are progressing at a sufficient rate to meet their academic goals.

AIMSweb assessments generate data that enable teachers to do more than simply identify a student's *level* of need. Specifically, new versions of the Class-at-a-Glance and the Student Instructional Planning reports—aligned to Common Core State Standards—can help educators optimize interventions for classes and individual students. Available when reporting benchmark Mathematics Concepts and Applications (M–CAP) scores for students in Grades 2 through 8, these Common Core-aligned reports can help educators place students in instructional groups, provide insight to student performance by domain, and help guide effective instruction via curriculum reference tables that link AIMSweb items to relevant lessons from the following Pearson math programs: enVisionMATH Common Core ©2012 and focusMATH, KeyMath-3 Essential Resources, and ***digits®***. This guide explains how to generate, interpret, and use these new reports and tables.

Class-at-a-Glance Report

The Class-at-a-Glance Report provides information on relative strengths and weaknesses of the entire class so that teachers can better organize instructional groups and identify students who need intervention. This report also identifies instructional resources relevant to the Common Core domain in which a student may be struggling.

As previously noted, the Class-at-a-Glance Report is currently available for the benchmark M–CAP scores of students in Grades 2 through 8. A sample Class-at-a-Glance Report that provides information about the M–CAP performance levels of an entire class is shown in Figure 1. This report has five levels of information, to be interpreted in this order:

- M–CAP score (points earned)
- Percentile rank (local and national norms)
- Instructional level (well-above average, above average, average, below average, and well-below average)
- Relative strengths and weaknesses (by Common Core domain)
- Item performance summary

When viewing a Class-at-a-Glance Report, note that students are listed by total score, from highest to lowest. The corresponding percentile ranks for local and national norms appear next to the students' scores. In the next column, students are grouped in five instructional levels according to their *national* percentile rank. Students performing below average or well-below average should be considered for intervention.

If a sizeable portion of students in a class is in the below and well-below average categories (e.g., 50% or more), it is important to consider whether the core curriculum needs strengthening. Likewise, when a sizable portion of students is in the above and well-above average categories, it is important to consider the underlying reason: Are the students accelerated in the core program? Is the curriculum not challenging enough? Looking at the difference between local and national norms can help to make such determinations.

After examining total scores, percentiles, and instructional levels, teachers can then look for any relative strengths or weaknesses demonstrated by their students. Identified by Common Core domain, relative strengths are defined as those domains in which a student correctly answers *more* items than would be expected of a student with the same overall number of correct answers. Similarly, relative weaknesses are defined as those domains in which a student correctly answers *fewer* items than would be expected of a student with the same overall number of correct answers. It is important to keep in mind that a given student's strengths and weaknesses are relative to his or her overall performance level and therefore the thresholds can vary from student to student. Finally, note that the Other category included in the report comprises items covering a mix of concepts not specifically aligned to grade-level expectations described in Common Core domains; as such, relative strengths and relative weaknesses are not calculated for this category.

Class-at-a-Glance Report

Common Core State Standards

Mathematics Concepts and Applications (M-CAP)

Teacher: Mr. Harrison - HomeRoom
Grade: 2
School: Adams Elementary
District: Washington

Fall 2012-2013
Local Norms: Adams Elementary
National Norms: AIMSweb National Norms

Relative Strength* Relative Weakness**

Name	M-CAP Score (points earned)	Percentile Rank		Instructional Level	Performance by Domain (Correct of attempted)					Total Item Performance			
					Common Core								
		Local Norms	National Norms		Number & Operations in Base Ten (12 items)	Operations & Algebraic Thinking (5 items)	Geometry (1 item)	Measurement & Data (7 items)	Other (4 items)	Accuracy	Correct	Attempted	Skipped
											Out of 29 total items		
Ross, Colton	40	96	99	Well Above Average (90th to 99th %ile)	9 of 12	5 of 5	1 of 1	7 of 7	3 of 4	86%	25	29	1
Shipman, Barbara	33	87	99		7 of 12	3 of 5	1 of 1	7 of 7	3 of 4	72%	21	29	4
Bertram, Nicole	31	79	99		10 of 12	3 of 5	0 of 1	5 of 7	2 of 4	68%	20	29	3
Baker, Ryan	25	71	97		10 of 12	1 of 5	0 of 1	6 of 7	2 of 4	65%	19	29	3
Buhr, Megan	22	62	95		6 of 11	2 of 5	1 of 1	4 of 7	1 of 4	50%	14	28	6
Davis, Zachary	16	54	89	Above Average (75th to 89th %ile)	3 of 12	1 of 5	0 of 1	4 of 7	2 of 4	34%	10	29	5
Walker, Ashley	14	46	85		6 of 11	1 of 4	0 of 1	2 of 7	1 of 3	38%	10	26	15
Stendahl, Kyle	11	37	76		4 of 11	1 of 4	1 of 1	0 of 6	1 of 3	28%	7	25	15
Alsaker, Jesse	9	29	68	Average (25th to 74th %ile)	4 of 6	0 of 2	0 of 0	2 of 5	1 of 1	50%	7	14	3
Wilkerson, Tayler	5	17	41		2 of 3	0 of 1	0 of 0	3 of 3	0 of 0	71%	5	7	0
Dugas, Victoria	5	17	41		1 of 11	0 of 5	0 of 1	3 of 7	0 of 4	14%	4	28	8
Berg, Chelsea	2	4	13	Below Average (10th to 24th %ile)	1 of 8	0 of 2	0 of 1	1 of 6	0 of 2	10%	2	19	4

Correct, incorrect and skipped items are considered attempted.
*Solved more items correctly in this domain than would be expected for a student with the same total score.
**Solved fewer items correctly in this domain than would be expected of a student with the same total score.

Figure 1. Sample Class-at-a-Glance Report

Based on the data shown in Figure 1, the following examples illustrate how to interpret relative strengths and weaknesses and how to utilize this information.

- With a total score of 40 and a national percentile rank of 99, Colton Ross' performance places him in the well-above average instructional level. The number of items Colton answered correctly indicates a relative weakness in the Number and Operations in Base Ten domain. However, he shows relative strengths in two domains: Operations and Algebraic Thinking and Measurement and Data. Ashley Walker's performance places her in the middle of the above-average range and indicates a relative weakness in the Measurement and Data domain. Based on this data, their teacher, Mr. Harrison, could pair these students to work on skills related to Measurement and Data, utilizing Colton's relative strength to compliment and target Ashley's relative weakness.
- Tayler Wilkerson's overall M–CAP performance places her at the low end of the average range, based on national norms (and below average based on local norms); but she demonstrates a relative strength in Measurement and Data by correctly answering all three items she attempted. Though Mr. Harrison may consider intervention based on Tayler's instructional level, she may not need additional instruction in Measurement and Data.
- Demonstrating no relative strengths or weaknesses, Chelsea Berg's overall performance—placing her in the below average range—indicates that she would benefit from additional instruction across all domains. Based on this information, Mr. Harrison will focus on general skills across the domains rather than a specific content area.

It is important to interpret relative strengths and weaknesses within the context of a student's overall performance; for example, a student with no relative strengths or weaknesses who performs at the 5th percentile requires intervention, whereas a student who has two relative weaknesses but is performing well-above average overall most likely does not. Furthermore, if a sizeable percentage (approximately 30% or more) of a class's students demonstrate relative weaknesses in a given domain, then consider whether that section of the curriculum needs strengthening. When making such a determination, it may be helpful to look at the performance of same-grade students in other classrooms to see if this is a grade-wide or class-specific trend.

Finally, consider the item performance summary data provided in the Class-at-a-Glance Report. This portion of the report details each student's overall accuracy rate and the number of items correct, attempted, and skipped. (Note that skipped items are defined as any item left unanswered prior to the last answered item; attempted items include both answered [correct or incorrect] and skipped items.) Item performance summary information can help teachers differentiate between the intervention needs of a student who is accurate but slow (high accuracy percentage, fewer attempted items) and a student who is fast but inaccurate (low accuracy percentage, more attempted items).

Student Instructional Planning Report

The AIMSweb Student Instructional Planning Report provides a detailed summary of each student's performance at the item level. It is organized by Common Core domain and identifies corresponding Pearson math program resources: enVisionMATH Common Core ©2012 and focusMATH, KeyMath-3 Essential Resources, or ***digits.*** Teachers can access this report by clicking the student's name in the Class-at-a-Glance Report.

Note that this report is a tool that can help teachers plan and tailor instruction *after* it has been determined that a student needs intervention. When making such decisions, the first information to consider is the student's total score and associated instructional level (found in the Class-at-a-Glance Report) before moving to the item-level information detailed in the Student Instructional Planning Report. This report lists the student's performance for each item—clustered by Common Core domain—and the accuracy rate for each domain, indicating which (if any) are considered relative strengths or weaknesses for said student. Finally, for users selecting any of the available curriculum resources previously listed, this report also identifies each item's corresponding lesson(s) from the chosen curriculum. A sample Student Instructional Planning Report is shown in Figure 2.

Student Instructional Planning Report

Common Core State Standards

Mathematics Concepts and Applications (M-CAP)

Student: Ryan Baker — **Fall** 2012-2013

M-CAP Fall Score: 25 (points earned) — **Teacher:** Mr. Harrison

Percentile Rank: — **Grade:** 2

National Aggregate Norms: 97 — **School:** Adams Elementary

Adams Elementary Norms: 71 — **District:** Washington

Recommended enVisionMATH Instructional Level: Advanced

Relative Strength* Relative Weakness**

Item #	Skill Assessed	Performance	Accuracy (% correct of attempted)	Pearson Instructional Resources (Instructional resources available for related skill)		
				enVisionMATH Common Core © 2012		focusMATH
				Corresponding Lesson	Related Lesson	Corresponding Step
Number & Operations in Base Ten - Relative Strength						
2	Compare numbers	Correct	83%	10-8	10-7	Grade 2 Book A,Steps 3-6 and 3-7
5	Add three numbers	Correct		2-5	2-4	Grade 2 Book B,Step 1-9
7	Decide to add or subtract to solve problems	Correct		1-7	1-3	Grade 1 Book A,Step 5-7
8	Count by twos	Correct		6-6	Grade 1: 7-5	Grade 2 Book A,Step 2-5
9	Count by threes	Incorrect		6-6		
12	Compare numbers	Correct		10-7	5-3	Grade 2 Book A,Step 3-6
15	Decide to add or subtract to solve problems	Correct		1-7	1-1	Grade 1 Book A,Step 5-7
18	Identify place value	Correct		10-2		Grade 2 Book A,Step 3-2
20	Compare numbers	Correct		10-7	5-3	Grade 2 Book A,Step 3-6
22	Identify place value	Correct		10-2		Grade 2 Book A,Step 3-2
24	Write the standard form of a number	Correct		10-3	10-2	Grade 2 Book A,Step 3-2
29	Add multiples of 100 to a number	Incorrect		10-4	11-2	
Operations & Algebraic Thinking - Relative Weakness						
4	Solve problems involving joining	Skipped	20%	1-2	1-1	Grade 2 Book B,Step 1-1
10	Solve problems involving separating	Incorrect		1-4	1-3	Grade 2 Book B,Step 2-1
23	Solve problems involving comparing	Skipped		1-5	1-3	Grade 2 Book B,Step 2-2
25	Subtract two-digit numbers	Correct		9-5	9-4	Grade 2 Book B,Step 5-3
27	Solve problems involving sharing	Incorrect		Step-Up 2		
Geometry						
16	Identify plane shapes	Incorrect	0%	12-3		
Measurement & Data - Relative Strength						
1	Measure length in inches	Correct	86%	15-2	15-4	Grade 2 Book C,Step 3-2
3	Measure height in inches	Correct		15-2	15-4	Grade 2 Book C,Step 3-2
6	Interpret data from a bar graph	Correct		16-6	16-3	
11	Count money	Correct		13-1		
13	Tell time	Correct		16-1		
19	Count money	Correct		13-4	13-1	
26	Tell time	Incorrect		16-1		
Other						
14	Use ordinal numbers	Correct	50%		Grade K: 2-8	Grade K Step 1-7
17	Find fractions of a set	Correct		Step-Up 7		
21	Use ordinal numbers	Skipped			Grade K: 2-8	Grade K Step 1-7
28	Find fractions of a set	Incorrect		Step-Up 7		

Correct, incorrect and skipped items are considered attempted.

*Solved more items correctly in this domain than would be expected for a student with the same total score.

**Solved fewer items correctly in this domain than would be expected of a student with the same total score.

Figure 2. Sample Student Instructional Planning Report

Curriculum Resources

The Student Instructional Planning Report can help to guide effective instruction through curriculum reference tables linking AIMSweb items to relevant lessons from the following Pearson math programs: enVisionMATH Common Core ©2012 and focusMATH, KeyMath-3 Essential Resources, and ***digits.*** The following sections briefly describe each of these math programs.

enVisionMATH Common Core ©2012 and focusMATH

enVisionMATH Common Core ©2012 is an elementary math instructional program that is aligned to the Common Core State Standards. This research-based program is organized by content area, each with lessons that develop related content strands through interactive learning and problem-based activities. This program incorporates a blended approach of traditional and investigative learning that emphasizes embedded assessment and data-driven remediation.

A Tier 3 response to intervention (RTI) tool, focusMATH uses explicit instruction to focus on foundational skills meant to accelerate student progress. Stepped-out math models help students build their mathematics knowledge, while a systematic assessment plan ensures that they are truly ready for the next step.

KeyMath-3 Essential Resources

KeyMath-3 Essential Resources is a comprehensive math intervention program that contains hundreds of lessons, student practice sheets, and brief assessments that can be effectively used in a variety of settings with different student populations, providing educators with ready access to effective and engaging intervention materials they can tailor to each student's learning needs.

Because of its comprehensive scope, KeyMath-3 Essential Resources can be used for an extended period as a supplement to regular classroom instruction. Alternatively, educators can select lessons on particular topics to provide targeted intervention for individual students or small groups. Students who could benefit from this math intervention program include at-risk students, those performing below grade level, and those struggling with specific concepts.

digits®

Aligned to Common Core standards, ***digits*** is a comprehensive, middle-grades math curriculum that is based on the interactive Learning Cycle™ of assessment, instruction, and practice. This program provides customized learning paths through differentiated lessons, homework, and study plans for students of varying proficiency levels. At-risk students are supported with targeted interventions, while higher-achieving students are challenged with enrichment lessons.

Entering Scores and Generating Reports

Before generating Class-at-a-Glance and Student Instructional Planning Reports, item-level M–CAP scores must first be entered into the AIMSweb system. To enter these scores, follow these steps:

1. Select the My Classes tab and then, if needed, click the appropriate class from the tabs along the left of the screen (see Figure 3 for Steps 1–4).
2. Select the Mathematics tab from the gray tabs across the top of the screen.
3. Select the desired benchmark scoring period (fall, winter, or spring) from the Timeframe drop-down menu and then click Go.
4. Select the circle in the M–CAP column and then click Edit Scores.
5. In the M–CAP column, click Item Responses in the row corresponding to the student whose score data you are entering (see Figure 4).
6. Select the appropriate probe number from the Probe drop-down menu (see Figure 5 for Steps 6–8).
7. Follow the directions on the screen to enter each item's data: correct, error, or skipped.
8. Click Save when all item-level data has been entered for a given student.
9. Repeat the steps for each student with item-level data to be entered.

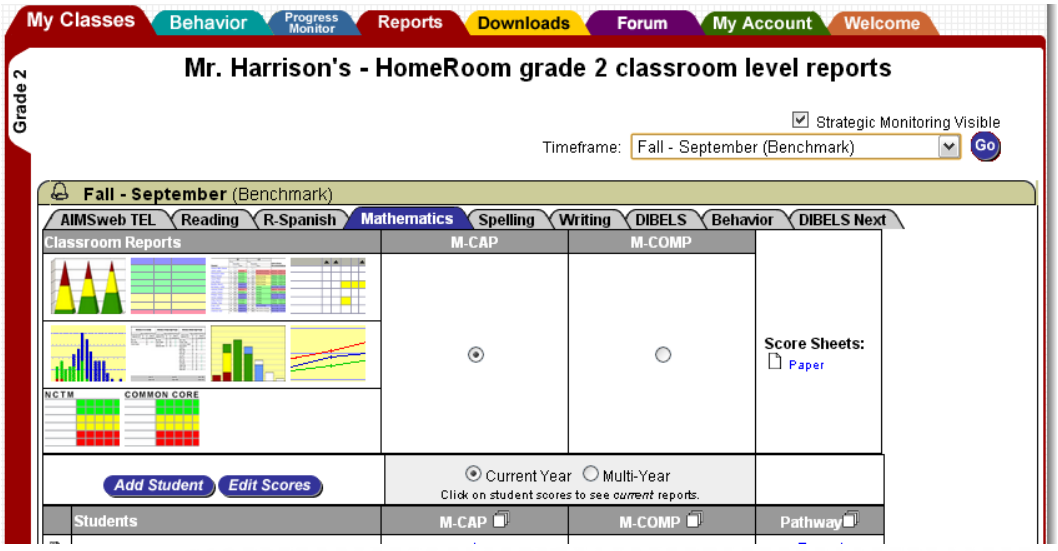

Figure 3. My Classes Screen With Mathematics Tab Selected

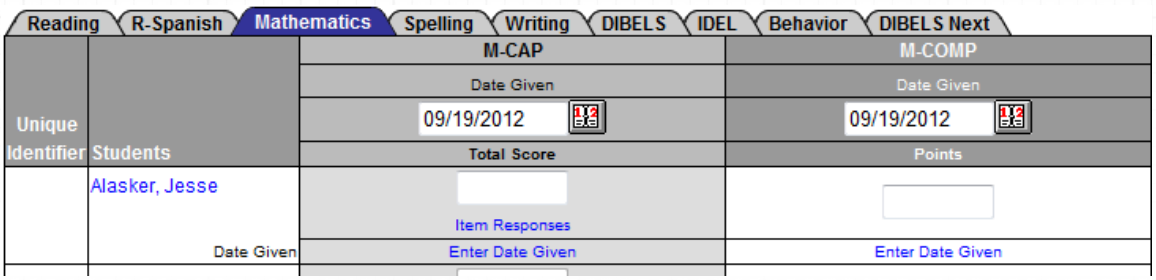

Figure 4. M–CAP Edit Scores Screen

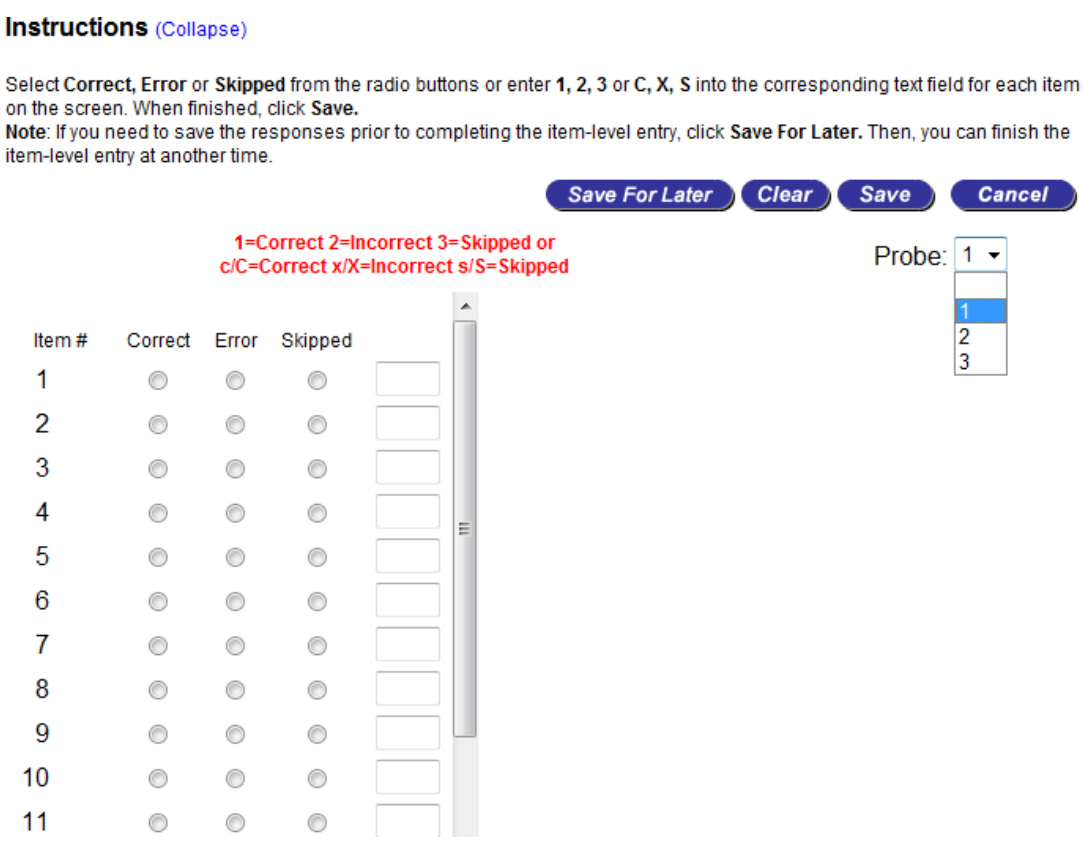

Figure 5. M–CAP Item-Level Score Entry Screen

To generate a Class-at-a-Glance Report, follow these steps (see Figure 3):

1. Select the My Classes tab and then, if needed, click the appropriate class from the tabs along the left of the screen.
2. Select the Mathematics tab from the gray tabs across the top of the screen.
3. Select the desired benchmark scoring period (fall, winter, or spring) from the Timeframe drop-down menu and then click Go.
4. Select the circle in the M–CAP column.
5. From the Classroom Reports icons, click the Common Core icon in the bottom row.
6. In the Report Options box, click Expand, select the desired comparison from the Comparison drop-down menu, and click Display.

To generate a Student Instructional Planning Report, follow these steps:

1. Generate the desired Class-at-a-Glance Report following the above steps.
2. Click on the name of the student whose Student Instructional Planning Report you want to generate.
3. In the Report Options box, click Expand, select the desired comparison from the Comparison drop-down menu, select the desired math program from the Curriculum drop-down menu, and click Display (see Figure 6).

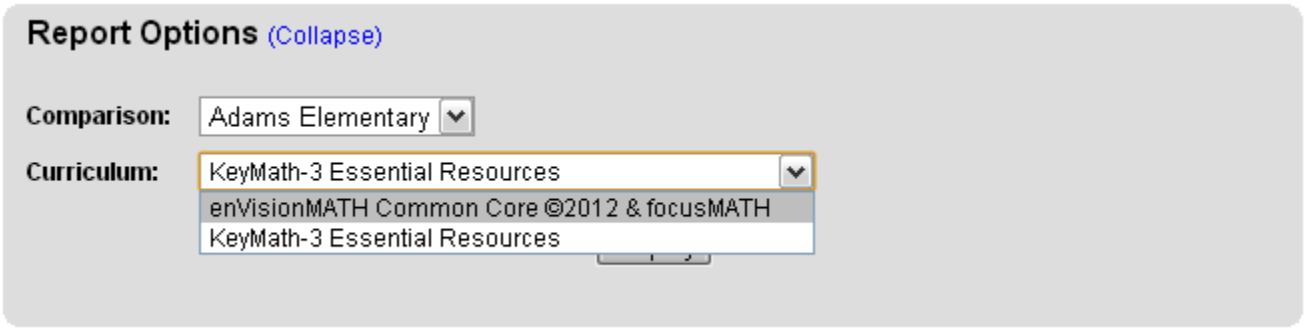

Figure 6. Report Options With Curriculum Menu Options

Curriculum Reference Tables

The following tables provide curriculum links between the AIMSweb M–CAP measure and the each of the following math programs: enVisionMATH Common Core ©2012 and focusMATH, KeyMath-3 Essential Resources, and ***digits.*** These tables—organized by grade and math curriculum—list each M–CAP item, the Common Core domain and skill addressed, and relevant lesson(s) from the math curriculum in question.

Table 1. M–CAP Grade 2 and enVisionMATH Common Core ©2012/focusMATH Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding enVisionMATH Common Core Lesson	Related enVisionMATH Common Core Lesson	Corresponding focusMATH Step
1	Measurement & Data	Measure length in inches	15-2	15-4	Grade 2 Book C, Step 3-2
2	Number & Operations in Base Ten	Compare numbers	10-8	10-7	Grade 2 Book A, Steps 3-6 and 3-7
3	Measurement & Data	Measure height in inches	15-2	15-4	Grade 2 Book C, Step 3-2
4	Operations & Algebraic Thinking	Solve problems involving joining	1-2	1-1	Grade 2 Book B, Step 1-1
5	Number & Operations in Base Ten	Add three numbers	2-5	2-4	Grade 2 Book B, Step 1-9
6	Measurement & Data	Interpret data from a bar graph	16-6	16-3	
7	Number & Operations in Base Ten	Decide to add or subtract to solve problems	1-7	1-3	Grade 1 Book A, Step 5-7
8	Number & Operations in Base Ten	Count by twos	6-6	Grade 1: 7-5	Grade 2 Book A, Step 2-5
9	Number & Operations in Base Ten	Count by threes	6-6		
10	Operations & Algebraic Thinking	Solve problems involving separating	1-4	1-3	Grade 2 Book B, Step 2-1
11	Measurement & Data	Count money	13-1		
12	Number & Operations in Base Ten	Compare numbers	10-7	5-3	Grade 2 Book A, Step 3-6
13	Measurement & Data	Tell time	16-1		
14	Other	Use ordinal numbers		Grade K: 2-8	Grade K Step 1-7
15	Number & Operations in Base Ten	Decide to add or subtract to solve problems	1-7	1-1	Grade 1 Book A, Step 5-7
16	Geometry	Identify plane shapes	12-3		
17	Other	Find fractions of a set	Step-Up 7		
18	Number & Operations in Base Ten	Identify place value	10-2		Grade 2 Book A, Step 3-2
19	Measurement & Data	Count money	13-4	13-1	
20	Number & Operations in Base Ten	Compare numbers	10-7	5-3	Grade 2 Book A, Step 3-6
21	Other	Use ordinal numbers		Grade K: 2-8	Grade K Step 1-7
22	Number & Operations in Base Ten	Identify place value	10-2		Grade 2 Book A, Step 3-2
23	Operations & Algebraic Thinking	Solve problems involving comparing	1-5	1-3	Grade 2 Book B, Step 2-2
24	Number & Operations in Base Ten	Write the standard form of a number	10-3	10-2	Grade 2 Book A, Step 3-2
25	Operations & Algebraic Thinking	Subtract two-digit numbers	9-5	9-4	Grade 2 Book B, Step 5-3
26	Measurement & Data	Tell time	16-1		
27	Operations & Algebraic Thinking	Solve problems involving sharing	Step-Up 2		
28	Other	Find fractions of a set	Step-Up 7		
29	Number & Operations in Base Ten	Add multiples of 100 to a number	10-4	11-2	

Table 2. M–CAP Grade 3 and enVisionMATH Common Core ©2012/focusMATH Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding enVisionMATH Common Core Lesson	Related enVisionMATH Common Core Lesson	Corresponding focusMATH Step
1	Measurement & Data	Measure length in centimeters			
2	Number & Operations—Fractions	Write fractions	9-2	9-1	Grade 3 Book B, Step 3-2
3	Operations & Algebraic Thinking	Find a numeric pattern	9-8		
4	Number & Operations—Fractions	Identify the parts of a region	9-2		Grade 3 Book B, Step 3-1
5	Measurement & Data	Count money			
6	Number & Operations in Base Ten	Identify place value	1-1		
7	Other	Identify lines of symmetry and types of angles	11-2		Grade 3 Book C, Steps 1-3 and 3-4
8	Measurement & Data	Interpret data in a table	16-6	16-2	
9	Operations & Algebraic Thinking	Subtract two-digit numbers	3-8	3-7	
10	Number & Operations in Base Ten	Identify place value	1-1		
11	Other	Read a thermometer			
12	Other	Identify height of a triangle			
13	Measurement & Data	Find elapsed time	12-4		
14	Other	Find the likelihood of an event			
15	Number & Operations in Base Ten	Compare numbers	1-6		
16	Measurement & Data	Interpret data from a bar graph	16-3		
17	Operations & Algebraic Thinking	Solve multiple-step problems	6-9		
18	Measurement & Data	Find the perimeter of a polygon	13-1	13-3	
19	Geometry	Identify polygons	11-3		Grade 3 Book C, Step 2-7
20	Number & Operations in Base Ten	Write the standard form of a number	1-1		
21	Other	Find the area of a region	14-3	14-4, 14-7	
22	Number & Operations in Base Ten	Write the standard form of a number	1-1		
23	Other	Read a calendar			
24	Other	Identify the parts of a region	9-2		Grade 3 Book B, Steps 3-1 and 3-2
25	Operations & Algebraic Thinking	Use 2 as a factor			
26	Number & Operations in Base Ten	Round whole numbers	2-5		
27	Other	Recognize acute, right, and obtuse angles	11-2		Grade 3 Book C, Step 1-3
28	Number & Operations in Base Ten	Round whole numbers	2-5		
29	Other	Estimate products			

Table 3. M–CAP Grade 4 and enVisionMATH Common Core ©2012/focusMATH Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding enVisionMATH Common Core Lesson	Related enVisionMATH Common Core Lesson	Corresponding focusMATH Step
1	Measurement & Data	Interpret data from a bar graph			
2	Number & Operations in Base Ten	Use mental math to add	4-1		
3	Measurement & Data	Measure length in inches	14-1		
4	Number & Operations—Fractions	Subtract mixed numbers	12-9	12-7	
5	Number & Operations in Base Ten	Use mental math to add	4-1		
6	Measurement & Data	Write a numeric expression	Step-Up Lesson 2		
7	Operations & Algebraic Thinking	Find a numeric pattern	2-2		
8	Number & Operations in Base Ten	Compare numbers	3-3	3-4	Grade 4 Book B, Step 1-2
9	Other	Use the Distributive Property	Step-Up Lesson 1	1-4	Grade 4 Book A, Step 3-3
10	Geometry	Identify parallel or perpendicular lines	16-1		Grade 3 Book C, Step 1-3
11	Measurement & Data	Converting units of time	14-10		
12	Other	Read a thermometer			
13	Operations & Algebraic Thinking	Problem solving/Use reasoning			
14	Other	Subtract decimals	Step-Up Lesson 7	15-3	
15	Number & Operations—Fractions	Identify parts of a set			Grade 4 Book B, Step 2-2
16	Operations & Algebraic Thinking	Find a geometric pattern	2-5	2-1	
17	Number & Operations in Base Ten	Balance equations	4-1		
18	Number & Operations in Base Ten	Identify place value	3-1		Grade 4 Book B, Step 1-1
19	Other	Identify ordered pairs			
20	Number & Operations in Base Ten	Estimate a difference	4-2		
21	Operations & Algebraic Thinking	Find a numeric pattern	2-2		
22	Number & Operations in Base Ten	Write the word form of a number	3-1		
23	Other	Determine probability			
24	Number & Operations—Fractions	Convert decimals to fractions	13-4		Grade 4 Book B, Step 3-4
25	Other	Balance equations	4-1	4-4	
26	Number & Operations—Fractions	Use 10 as a factor	5-1		Grade 4 Book A, Step 2-2
27	Number & Operations—Fractions	Identify parts of a region			Grade 4 Book B, Step 2-1
28	Operations & Algebraic Thinking	Understand that multiplication and division are inverse operations	1-7		Grade 4 Book A, Step 4-2
29	Other	Determine outcomes			
30	Other	Convert fractions to decimals	13-4		Grade 4 Book B, Step 3-5

Table 4. M–CAP Grade 5 and enVisionMATH Common Core ©2012/focusMATH Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding enVisionMATH Common Core Lesson	Related enVisionMATH Common Core Lesson	Corresponding focusMATH Step
1	Measurement & Data	Interpret data from a bar graph		Grade 3: 16-3	
2	Number & Operations in Base Ten	Identify place value	1-1		
3	Other	Find elapsed time		Grade 3: 12-4	
4	Operations & Algebraic Thinking	Solve multiplication equations		Grade 6: 4-4	
5	Number & Operations—Fractions	Compare fractions		Grade 4: 11-6	Grade 4 Book B, Steps 2-5 and 2-6
6	Other	Find elapsed time		Grade 3: 12-4	
7	Number & Operations in Base Ten	Write the standard form of a number	1-1		
8	Operations & Algebraic Thinking	Solve multiplication equations		Grade 6: 4-4	
9	Other	Find the mean		Grade 6: 19-3	
10	Number & Operations—Fractions	Identify the parts of a region		Grade 3:9-2	Grade 5 Book B, Step 2-1
11	Number & Operations in Base Ten	Find the quotient	5-6		Grade 5 Book A, Step 5-3
12	Other	Find the mean, median, and mode		Grade 6: 19-3, 19-4	
13	Number & Operations in Base Ten	Estimate sums with money	2-3		
14	Other	Find possible outcomes			
15	Other	Interpret circle graphs		Grade 3: 10-5 (Enrichment)	
16	Number & Operations in Base Ten	Round whole numbers	2-2		
17	Number & Operations—Fractions	Compare fractions		Grade 4: 11-6	Grade 4 Book B, Steps 2-5 and 2-6
18	Number & Operations—Fractions	Find the fraction of a number	11-2		
19	Geometry	Identify ordered pairs	16-1		
20	Operations & Algebraic Thinking	Find a numeric pattern	2-3 (Algebra Connection)		
21	Number & Operations in Base Ten	Identify place value	1-4	1-1 (whole numbers)	
22	Operations & Algebraic Thinking	Solve multiple-step problems	7-7		
23	Measurement & Data	Find area of a rectangle	11-5		Grade 5 Book C, Step 3-2
24	Number & Operations in Base Ten	Round whole numbers	2-2		
25	Measurement & Data	Solve multiple-step problems	11-8		Grade 5 Book B, Step 2-2
26	Geometry	Find perimeter of a region	13-7		Grade 5 Book C, Step 2-4
27	Other	Evaluate expressions	8-4		
28	Other	Find the greatest common factor	SL-7		Grade 5 Book B, Step 2-5
29	Measurement & Data	Measure length in centimeters or inches		Grade 4: 14-6	Grade 5 Book C, Step 2-3
30	Operations & Algebraic Thinking	Apply the order of operations	8-2		

Table 5. M–CAP Grade 6 and enVisionMATH Common Core ©2012/focusMATH Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding enVisionMATH Common Core Lesson	Related enVisionMATH Common Core Lesson	Corresponding focusMATH Step
1	Operations & Algebraic Thinking	Solve multiplication equations	4-4	4-1	Grade 6 Book C, Step 5-3
2	Other	Compare numbers	1-2		Grade 4 Book B, Step 1-2
3	Other	Compare fractions	5-5		Grade 4 Book B, Step 2-6
4	Other	Choose appropriate units of measurement	16-2		Grade 5 Book C, Step 2-3
5	Other	Identify the parts of a region	9-7		Grade 6 Book A, Step 2-1
6	Other	Find a numeric pattern	3-2		
7	Other	Interpret data from a bar graph	19-1	19-5	
8	Geometry	Identify angle measurements in a triangle	11-4		Grade 3 Book C, Step 2-9
9	Other	Identify place value	1-1	1-4	
10	Expressions & Equations	Solve a two-step equation	15-1		
11	The Number System	Compare decimals and fractions	6-4	1-6	Grade 4 Book B, Step 4-5
12	Other	Find combinations	1-7		
13	Ratios & Proportional Relationships	Convert metric units of length	16-2		
14	Ratios & Proportional Relationships	Find least common multiples	7-2	5-1	
15	Expressions & Equations	Write algebraic expressions	2-1		
16	Other	Identify place value	1-1	1-4	
17	Ratios & Proportional Relationships	Convert customary units of weight	16-1		
18	Other	Estimate decimal sums	3-1		
19	Other	Identify parts of a circle	11-6		
20	The Number System	Compare and order fractions	6-3	5-5	Grade 4 Book B, Step 2-8
21	Other	Estimate the sums of whole numbers	3-1		
22	The Number System	Find the greatest common factor	5-3		Grade 6 Book A, Step 2-4
23	Expressions & Equations	Write algebraic expressions	2-1		
24	Ratios & Proportional Relationships	Represent percentages as fractions	14-2		
25	Other	Write improper fractions as mixed numbers	6-3		Grade 6 Book A, Step 2-3
26	Other	Choose appropriate units of measurement	16-2		Grade 5 Book C, Step 2-3
27	Expressions & Equations	Apply the order of operations	2-3		Grade 6 Book C, Step 4-2
28	Other	Round a decimal	3-3	3-1	
29	Statistics & Probability	Find the mean	19-3		

Table 6. M–CAP Grade 2 and KeyMath-3 Essential Resources (ER) Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
1	Measurement & Data	Measure length in inches	Level I	Measurement	Concept Cluster 5~ Using Standard Units to Measure Length	Lesson 3~Measuring Length With Inch Units
2	Number & Operations in Base Ten	Compare numbers	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 2~Estimating and Comparing Three-Digit Numbers
3	Measurement & Data	Measure height in inches	Level I	Measurement	Concept Cluster 5~ Using Standard Units to Measure Length	Lesson 3~Measuring Length With Inch Units
4	Operations & Algebraic Thinking	Solve problems involving joining	Level I	Foundations of Problem Solving	Concept Cluster 3~ Developing Problem-Solving Skills Using Two- and Three-Digit Numbers	Lesson 2~Solving Simple Problems With Addition and Subtraction
5	Number & Operations in Base Ten	Add three numbers	Level I	Addition & Subtraction	Concept Cluster 4~ Adding and Subtracting Without Regrouping	Lesson 1~Introducing the Addition Algorithm
6	Measurement & Data	Interpret data from a bar graph	Level I	Data Analysis and Probability	Concept Cluster 3~ Using Charts, Tables, and Graphs to Represent Data	Lesson 3~Constructing and Interpreting Bar Graphs
7	Number & Operations in Base Ten	Decide to add or subtract to solve problems	Level I	Algebra	Concept Cluster 6~ Investigating Number Sentences	Lesson 1~Identifying Numbers That Yield a Given Sum or Difference
8	Number & Operations in Base Ten	Count by twos	Level I	Algebra	Concept Cluster 5~ Exploring Patterns and Rules	Lesson 1~Exploring Number Patterns
9	Number & Operations in Base Ten	Count by threes	Level I	Algebra	Concept Cluster 5~ Exploring Patterns and Rules	Lesson 1~Exploring Number Patterns
10	Operations & Algebraic Thinking	Solve problems involving separating	Level I	Foundations of Problem Solving	Concept Cluster 3~ Developing Problem-Solving Skills Using Two- and Three-Digit Numbers	Lesson 2~Solving Simple Problems With Addition and Subtraction
11	Measurement & Data	Count money	Level II	Measurement	Concept Cluster 2~ Exploring Money and Time	Lesson 1~Combining Coins and Making Change to $1
12	Number & Operations in Base Ten	Compare numbers	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 2~Estimating and Comparing Three-Digit Numbers
13	Measurement & Data	Tell time	Level I	Measurement	Concept Cluster 6~ Combining Coins and Telling Time	Lesson 3~Telling Time to the Quarter Hour
14	Other	Use ordinal numbers	Level I	Numeration	Concept Cluster 3~ Using Numbers and Numerals 0-9	Lesson 5~Ordinal Positions First Through Ninth
15	Number & Operations in Base Ten	Decide to add or subtract to solve problems	Level I	Algebra	Concept Cluster 6~ Investigating Number Sentences	Lesson 1~Identifying Numbers That Yield a Given Sum or Difference
16	Geometry	Identify plane shapes	Level II	Geometry	Concept Cluster 1~ Investigating Two-Dimensional Figures	Lesson 1~Exploring Polygons

continued

Table 6. M–CAP Grade 2 and KeyMath-3 Essential Resources (ER) Curriculum Reference *(continued)*

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
17	Other	Find fractions of a set	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 3~Representing Fractions With Part/ Group Models
18	Number & Operations in Base Ten	Identify place value	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 1~Representing and Recording Three-Digit Numbers
19	Measurement & Data	Count money	Level II	Measurement	Concept Cluster 2~ Exploring Money and Time	Lesson 2~Using Monetary Values to $100
20	Number & Operations in Base Ten	Compare numbers	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 2~Estimating and Comparing Three-Digit Numbers
21	Other	Use ordinal numbers	Level I	Numeration	Concept Cluster 3~ Using Numbers and Numerals 0-9	Lesson 5~Ordinal Positions First Through Ninth
22	Number & Operations in Base Ten	Identify place value	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 1~Representing and Recording Three-Digit Numbers
23	Operations & Algebraic Thinking	Solve problems involving comparing	Level I	Foundations of Problem Solving	Concept Cluster 3~ Developing Problem-Solving Skills Using Two- and Three-Digit Numbers	Lesson 2~Solving Simple Problems With Addition and Subtraction
24	Number & Operations in Base Ten	Write the standard form of a number	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 1~Representing and Recording Three-Digit Numbers
25	Operations & Algebraic Thinking	Subtract two-digit numbers	Level I	Foundations of Problem Solving	Concept Cluster 3~ Developing Problem-Solving Skills Using Two- and Three-Digit Numbers	Lesson 2~Solving Simple Problems With Addition and Subtraction
26	Measurement & Data	Tell time	Level I	Measurement	Concept Cluster 6~ Combining Coins and Telling Time	Lesson 3~Telling Time to the Quarter Hour
27	Operations & Algebraic Thinking	Solve problems involving sharing	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
28	Other	Find fractions of a set	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 3~Representing Fractions With Part/ Group Models
29	Number & Operations in Base Ten	Add multiples of 100 to a number	Level II	Addition & Subtraction	Concept Cluster 1~ Adding and Subtracting Multidigit Numbers	Lesson 1~Adding Three- and Four-Digit Numbers

Table 7. M–CAP Grade 3 and KeyMath-3 Essential Resources (ER) Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
1	Measurement & Data	Measure length in centimeters	Level I	Measurement	Concept Cluster 5~ Using Standard Units to Measure Length	Lesson 1~Estimating and Measuring Length With Centimeter Units
2	Number & Operations—Fractions	Write fractions	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 2~Exploring Part/Whole Fraction Models
3	Operations & Algebraic Thinking	Find a numeric pattern	Level I	Algebra	Concept Cluster 5~ Exploring Patterns and Rules	Lesson 1~Exploring Number Patterns
4	Number & Operations—Fractions	Identify the parts of a region	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 2~Exploring Part/Whole Fraction Models
5	Measurement & Data	Count money	Level II	Measurement	Concept Cluster 2~ Exploring Money and Time	Lesson 2~Using Monetary Values to $100
6	Number & Operations in Base Ten	Identify place value	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 1~Representing and Recording Three-Digit Numbers
7	Other	Identify lines of symmetry and types of angles	Level I	Geometry	Concept Cluster 4~ Applying Visual Reasoning and Transformations	Lesson 3~Investigating and Creating Symmetry
7	Geometry	Identify lines of symmetry and types of angles	Level II	Geometry	Concept Cluster 3~ Using a Coordinate System to Describe Locations and Relationships	Lesson 4~Describing and Constructing Angles and Polygons
8	Measurement & Data	Interpret data in a table	Level I	Data Analysis and Probability	Concept Cluster 2~ Constructing and Interpreting Simple Charts, Tables, and Graphs	Lesson 1~Introducing Simple Charts and Tables
9	Operations & Algebraic Thinking	Subtract two-digit numbers	Level I	Foundations of Problem Solving	Concept Cluster 3~ Developing Problem-Solving Skills Using Two- and Three-Digit Numbers	Lesson 2~Solving Simple Problems With Addition and Subtraction
10	Number & Operations in Base Ten	Identify place value	Level II	Numeration	Concept Cluster 1~ Working With Three- and Four-Digit Numbers	Lesson 1~Representing and Recording Four-Digit Numbers
11	Other	Read a thermometer				
12	Other	Identify height of a triangle				
13	Measurement & Data	Find elapsed time	Level I	Measurement	Concept Cluster 6~ Combining Coins and Telling Time	Lesson 4~Telling Time to Five-Minute Intervals
14	Other	Find the likelihood of an event	Level I	Data Analysis and Probability	Concept Cluster 4~ Exploring Chance and Outcomes	Lesson 2~Exploring Unequal Outcomes
15	Number & Operations in Base Ten	Compare numbers	Level II	Numeration	Concept Cluster 1~ Working With Three- and Four-Digit Numbers	Lesson 2~Estimating, Comparing, and Ordering Three- and Four-Digit Numbers

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Table 7. M–CAP Grade 3 and KeyMath-3 Essential Resources (ER) Curriculum Reference *(continued)*

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
16	Measurement & Data	Interpret data from a bar graph	Level I	Data Analysis and Probability	Concept Cluster 3~ Using Charts, Tables, and Graphs to Represent Data	Lesson 3~Constructing and Interpreting Bar Graphs
17	Operations & Algebraic Thinking	Solve multiple-step problems	Level II	Foundations of Problem Solving	Concept Cluster 3~ Extending Problem-Solving Skills to Multistep Problems	Lesson 2~Determining Operational Sequences
18	Measurement & Data	Find the perimeter of a polygon				
19	Geometry	Identify polygons	Level II	Geometry	Concept Cluster 1~ Investigating Two-Dimensional Figures	Lesson 1~Exploring Polygons
20	Number & Operations in Base Ten	Write the standard form of a number	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 1~Representing and Recording Three-Digit Numbers
21	Other	Find the area of a region	Level I	Measurement	Concept Cluster 3~ Using Nonstandard Units	Lesson 2~Measuring Area With Nonstandard Units
22	Number & Operations in Base Ten	Write the standard form of a number	Level II	Numeration	Concept Cluster 1~ Working With Three- and Four-Digit Numbers	Lesson 1~Representing and Recording Four-Digit Numbers
23	Other	Read a calendar	Level I	Measurement	Concept Cluster 4~ Exploring Weeks, Months, and Time to the Hour	Lesson 4~Using a Monthly Calendar
24	Other	Identify the parts of a region	Level II	Geometry	Concept Cluster 2~ Investigating Three-Dimensional Figures	Lesson 2~Investigating Rectangular and Triangular Prisms
25	Operations & Algebraic Thinking	Use 2 as a factor	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
26	Number & Operations in Base Ten	Round whole numbers	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 5~Rounding Three-Digit Numbers
27	Other	Recognize acute, right, and obtuse angles	Level II	Geometry	Concept Cluster 3~ Using a Coordinate System to Describe Locations and Relationships	Lesson 4~Describing and Constructing Angles and Polygons
28	Number & Operations in Base Ten	Round whole numbers	Level I	Numeration	Concept Cluster 8~ Working With Three-Digit Numbers	Lesson 5~Rounding Three-Digit Numbers
29	Other	Estimate products	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems

Table 8. M–CAP Grade 4 and KeyMath-3 Essential Resources (ER) Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
1	Measurement & Data	Interpret data from a bar graph	Level I	Data Analysis and Probability	Concept Cluster 3~ Using Charts, Tables, and Graphs to Represent Data	Lesson 3~Constructing and Interpreting Bar Graphs
2	Number & Operations in Base Ten	Use mental math to add	Level II	Mental Computation & Estimation	Concept Cluster 1~ Reviewing All Operations and Using Them in Computation Chains	Lesson 1~Mentally Adding and Subtracting With Two- and Three-Digit Numbers With No Regrouping
3	Measurement & Data	Measure length in inches	Level I	Measurement	Concept Cluster 5~ Using Standard Units to Measure Length	Lesson 3~Measuring Length With Inch Units
4	Number & Operations—Fractions	Subtract mixed numbers	Level II	Addition & Subtraction	Concept Cluster 3~ Adding and Subtracting Decimals and Fractions With Unlike Terms	Lesson 5~Adding and Subtracting Fractions and Mixed Numbers
5	Number & Operations in Base Ten	Use mental math to add	Level II	Mental Computation & Estimation	Concept Cluster 3~ Computing and Estimating Multidigit Numbers	Lesson 1~Using Strategies to Mentally Add and Subtract
6	Measurement & Data	Write a numeric expression				
7	Operations & Algebraic Thinking	Find a numeric pattern	Level I	Algebra	Concept Cluster 5~ Exploring Patterns and Rules	Lesson 1~Exploring Number Patterns
8	Number & Operations in Base Ten	Compare numbers	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 2~Ordering and Comparing Multidigit Numbers
9	Other	Use the Distributive Property	Level I	Algebra	Concept Cluster 7~ Exploring Expressions, Variables, and Equations	Lesson 3~Exploring Simple Equations
10	Geometry	Identify parallel or perpendicular lines	Level II	Geometry	Concept Cluster 3~ Using a Coordinate System to Describe Locations and Relationships	Lesson 3~Investigating Intersecting and Nonintersecting Lines and Line Segments
11	Measurement & Data	Converting units of time	Level I	Foundations of Problem Solving	Concept Cluster 3~ Developing Problem-Solving Skills Using Two- and Three-Digit Numbers	Lesson 2~Solving Simple Problems With Addition and Subtraction
12	Other	Read a thermometer				
13	Operations & Algebraic Thinking	Problem solving/ Use reasoning	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
14	Other	Subtract decimals	Level II	Addition & Subtraction	Concept Cluster 2~ Adding and Subtracting Fractions and Decimals With Like Terms	Lesson 2~Subtracting Decimals With Same Place Values
14	Number & Operations in Base Ten	Subtract decimals	Level I	Data Analysis and Probability	Concept Cluster 2~ Constructing and Interpreting Simple Charts, Tables, and Graphs	Lesson 1~Introducing Simple Charts and Tables

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Table 8. M–CAP Grade 4 and KeyMath-3 Essential Resources (ER) Curriculum Reference *(continued)*

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
15	Number & Operations—Fractions	Identify parts of a set	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 2~Exploring Part/Whole Fraction Models
16	Operations & Algebraic Thinking	Find a geometric pattern	Level I	Algebra	Concept Cluster 4~ Exploring Repeating and Growing Patterns	Lesson 2~Extending Repeating Patterns
17	Number & Operations in Base Ten	Balance equations	Level I	Algebra	Concept Cluster 7~ Exploring Expressions, Variables, and Equations	Lesson 3~Exploring Simple Equations
18	Number & Operations in Base Ten	Identify place value	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
19	Other	Identify ordered pairs	Level II	Geometry	Concept Cluster 3~ Using a Coordinate System to Describe Locations and Relationships	Lesson 1~Describing Points and Paths on a Coordinate Grid
20	Number & Operations in Base Ten	Estimate a difference	Level II	Mental Computation & Estimation	Concept Cluster 3~ Computing and Estimating Multidigit Numbers	Lesson 5~Using Strategies to Estimate Answers
21	Operations & Algebraic Thinking	Find a numeric pattern	Level II	Algebra	Concept Cluster 2~ Analyzing Patterns With Rules, Tables, and Graphs	Lesson 1~ Using Rules to Define Numeric Patterns
22	Number & Operations in Base Ten	Write the word form of a number	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
23	Other	Determine probability	Level II	Data Analysis and Probability	Concept Cluster 4~ Investigating Possible Outcomes and Probability	Lesson 1~Determining Probability for Independent Events
24	Number & Operations—Fractions	Convert decimals to fractions	Level II	Numeration	Concept Cluster 5~ Exploring Decimal Numbers	Lesson 1~Representing and Recording Decimal Tenths
25	Other	Balance equations	Level I	Algebra	Concept Cluster 7~ Exploring Expressions, Variables, and Equations	Lesson 3~Exploring Simple Equations
26	Number & Operations—Fractions	Use 10 as a factor	Level II	Multiplication & Division	Concept Cluster 5~ Multiplying and Dividing by Two-Digit Numbers	Lesson 1~Multiplying and Dividing by Tens
27	Number & Operations—Fractions	Identify parts of a region	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 2~Exploring Part/Whole Fraction Models
28	Operations & Algebraic Thinking	Understand that multiplication and division are inverse operations	Level II	Algebra	Concept Cluster 4~ Investigating Mathematical Relationships Using Equations	Lesson 2~Solving One-Step Equations Involving All Operations
29	Other	Determine outcomes	Level II	Data Analysis and Probability	Concept Cluster 4~ Investigating Possible Outcomes and Probability	Lesson 1~Determining Probability for Independent Events
30	Other	Convert fractions to decimals	Level II	Numeration	Concept Cluster 5~ Exploring Decimal Numbers	Lesson 1~Representing and Recording Decimal Tenths

Table 9. M–CAP Grade 5 and KeyMath-3 Essential Resources (ER) Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
1	Measurement & Data	Interpret data from a bar graph	Level I	Data Analysis and Probability	Concept Cluster 3~ Using Charts, Tables, and Graphs to Represent Data	Lesson 3~Constructing and Interpreting Bar Graphs
2	Number & Operations in Base Ten	Identify place value	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
3	Other	Find elapsed time	Level I	Measurement	Concept Cluster 6~ Combining Coins and Telling Time	Lesson 4~Telling Time to Five-Minute Intervals
4	Operations & Algebraic Thinking	Solve multiplication equations	Level II	Algebra	Concept Cluster 4~ Investigating Mathematical Relationships Using Equations	Lesson 2~Solving One-Step Equations Involving All Operations
5	Number & Operations—Fractions	Compare fractions	Level II	Numeration	Concept Cluster 2~ Using Models to Explore Fractions	Lesson 2~Using Models to Compare and Order Fractions
6	Other	Find elapsed time	Level I	Measurement	Concept Cluster 6~ Combining Coins and Telling Time	Lesson 4~Telling Time to Five-Minute Intervals
7	Number & Operations in Base Ten	Write the standard form of a number	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
8	Operations & Algebraic Thinking	Solve multiplication equations	Level II	Algebra	Concept Cluster 4~ Investigating Mathematical Relationships Using Equations	Lesson 2~Solving One-Step Equations Involving All Operations
9	Other	Find the mean	Level II	Data Analysis and Probability	Concept Cluster 3~ Exploring Graphs, Plots, and the Shape of Data	Lesson 4~Describing the Shape of a Data Distribution
10	Number & Operations—Fractions	Identify the parts of a region	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 2~Exploring Part/Whole Fraction Models
11	Number & Operations in Base Ten	Find the quotient	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
12	Other	Find the mean, median, and mode	Level II	Data Analysis and Probability	Concept Cluster 3~ Exploring Graphs, Plots, and the Shape of Data	Lesson 4~Describing the Shape of a Data Distribution
13	Number & Operations in Base Ten	Estimate sums with money	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
14	Other	Find possible outcomes	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
15	Other	Interpret circle graphs	Level II	Data Analysis and Probability	Concept Cluster 1~ Exploring Charts, Tables, and Graphs	Lesson 4~Exploring Circle Graphs
16	Number & Operations in Base Ten	Round whole numbers	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers

continued

Table 9. M–CAP Grade 5 and KeyMath-3 Essential Resources (ER) Curriculum Reference *(continued)*

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
16	Number & Operations in Base Ten	Round whole numbers	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 3~Estimating With Multidigit Numbers
17	Number & Operations—Fractions	Compare fractions	Level II	Numeration	Concept Cluster 2~ Using Models to Explore Fractions	Lesson 2~Using Models to Compare and Order Fractions
18	Number & Operations—Fractions	Find the fraction of a number	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
19	Geometry	Identify ordered pairs	Level II	Geometry	Concept Cluster 3~ Using a Coordinate System to Describe Locations and Relationships	Lesson 1~Describing Points and Paths on a Coordinate Grid
20	Operations & Algebraic Thinking	Find a numeric pattern	Level I	Algebra	Concept Cluster 5~ Exploring Patterns and Rules	Lesson 1~Exploring Number Patterns
21	Number & Operations in Base Ten	Identify place value	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
21	Number & Operations in Base Ten	Identify place value	Level II	Numeration	Concept Cluster 5~ Exploring Decimal Numbers	Lesson 2~Representing and Recording Decimal Hundredths
22	Operations & Algebraic Thinking	Solve multiple-step problems	Level II	Foundations of Problem Solving	Concept Cluster 3~ Extending Problem-Solving Skills to Multistep Problems	Lesson 2~Determining Operational Sequences
23	Measurement & Data	Find area of a rectangle	Level II	Measurement	Concept Cluster 3~ Using Formulas to Calculate Area and Volume	Lesson 1~Calculating the Perimeter and Area of Rectangles
24	Number & Operations in Base Ten	Round whole numbers	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
24	Number & Operations in Base Ten	Round whole numbers	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 3~Estimating With Multidigit Numbers
25	Measurement & Data	Solve multiple-step problems	Level II	Foundations of Problem Solving	Concept Cluster 3~ Extending Problem-Solving Skills to Multistep Problems	Lesson 2~Determining Operational Sequences
26	Geometry	Find perimeter of a region	Level II	Measurement	Concept Cluster 3~ Using Formulas to Calculate Area and Volume	Lesson 1~Calculating the Perimeter and Area of Rectangles
27	Other	Evaluate expressions	Level I	Algebra	Concept Cluster 7~ Exploring Expressions, Variables, and Equations	Lesson 2~Determining the Value of Expressions
28	Other	Find the greatest common factor	Level II	Numeration	Concept Cluster 4~ Investigating Fractions	Lesson 2~Simplifying Fractions
29	Measurement & Data	Measure length in centimeters or inches	Level I	Measurement	Concept Cluster 5~ Using Standard Units to Measure Length	Lesson 3~Measuring Length With Inch Units
30	Operations & Algebraic Thinking	Apply the order of operations				

Table 10. M–CAP Grade 6 and KeyMath-3 Essential Resources (ER) Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
1	Operations & Algebraic Thinking	Solve multiplication equations	Level II	Algebra	Concept Cluster 4~ Investigating Mathematical Relationships Using Equations	Lesson 2~Solving One-Step Equations Involving All Operations
2	Other	Compare numbers	Level I	Numeration	Concept Cluster 6~ Working With Two-Digit Numbers	Lesson 2~Comparing Two-Digit Numbers
3	Other	Compare fractions	Level II	Numeration	Concept Cluster 2~ Using Models to Explore Fractions	Lesson 2~Using Models to Compare and Order Fractions
4	Other	Choose appropriate units of measurement	Level II	Measurement	Concept Cluster 1~ Estimating and Measuring Length, Distance, Area, and Weight	Lesson 1~Reviewing the Measurement of Length
5	Other	Identify the parts of a region	Level I	Numeration	Concept Cluster 7~ Introducing Fractions and Models	Lesson 2~Exploring Part/Whole Fraction Models
6	Other	Find a numeric pattern	Level I	Algebra	Concept Cluster 5~ Exploring Patterns and Rules	Lesson 1~Exploring Number Patterns
7	Other	Interpret data from a bar graph	Level II	Data Analysis and Probability	Concept Cluster 1~ Exploring Charts, Tables, and Graphs	Lesson 3~Making and Interpreting Picture Graphs and Bar Graphs
8	Geometry	Identify angle measurements in a triangle	Level II	Geometry	Concept Cluster 3~ Using a Coordinate System to Describe Locations and Relationships	Lesson 4~Describing and Constructing Angles and Polygons
9	Other	Identify place value	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
10	Expressions & Equations	Solve a two-step equation				
11	The Number System	Compare decimals and fractions	Level II	Numeration	Concept Cluster 2~ Using Models to Explore Fractions	Lesson 2~Using Models to Compare and Order Fractions
11	The Number System	Compare decimals and fractions	Level II	Numeration	Concept Cluster 5~ Exploring Decimal Numbers	Lesson 1~Representing and Recording Decimal Tenths
12	Other	Find combinations	Level II	Foundations of Problem Solving	Concept Cluster 2~ Extending Strategies for Solving Word Problems	Lesson 1~Exploring Word Problems
13	Ratios & Proportional Relationships	Convert metric units of length	Level II	Measurement	Concept Cluster 1~ Estimating and Measuring Length, Distance, Area, and Weight	Lesson 2~Estimating and Measuring Distance
14	Ratios & Proportional Relationships	Find least common multiples	Level II	Foundations of Problem Solving	Concept Cluster 1~ Extending Problem-Solving Strategy Skills	Lesson 1~Applying Guess-and-Test and Draw-a-Picture Problem-Solving Strategies
15	Expressions & Equations	Write algebraic expressions	Level II	Multiplication & Division	Concept Cluster 1~ Products and Quotients to 30	Lesson 1~Representing and Completing Multiplication Facts

continued

Table 10. M–CAP Grade 6 and KeyMath-3 Essential Resources (ER) Curriculum Reference *(continued)*

Item #	Common Core Domain	Skill Addressed	Corresponding KeyMath-3 ER Level	Corresponding KeyMath-3 ER Strand	Corresponding KeyMath-3 ER Cluster	Corresponding KeyMath-3 ER Lesson
16	Other	Identify place value	Level II	Numeration	Concept Cluster 3~ Using Multidigit Numbers	Lesson 1~Representing and Recording Multidigit Numbers
17	Ratios & Proportional Relationships	Convert customary units of weight	Level II	Measurement	Concept Cluster 1~ Estimating and Measuring Length, Distance, Area, and Weight	Lesson 4~Estimating and Measuring Weight
18	Other	Estimate decimal sums	Level II	Numeration	Concept Cluster 5~ Exploring Decimal Numbers	Lesson 4~Estimating and Rounding Decimal Values
19	Other	Identify parts of a circle	Level II	Geometry	Concept Cluster 1~ Investigating Two-Dimensional Figures	Lesson 2~Investigating Circles
20	The Number System	Compare and order fractions	Level II	Numeration	Concept Cluster 2~ Using Models to Explore Fractions	Lesson 2~Using Models to Compare and Order Fractions
20	The Number System	Compare and order fractions	Level II	Numeration	Concept Cluster 4~ Investigating Fractions	Lesson 2~Simplifying Fractions
21	Other	Estimate the sums of whole numbers	Level I	Addition & Subtraction	Concept Cluster 4~ Adding and Subtracting Without Regrouping	Lesson 4~Estimating Sums and Differences
22	The Number System	Find the greatest common factor	Level II	Numeration	Concept Cluster 4~ Investigating Fractions	Lesson 2~Simplifying Fractions
23	Expressions & Equations	Write algebraic expressions	Level II	Algebra	Concept Cluster 1~ Investigating Expressions, Equations, and Number Relationships	Lesson 1~Investigating Expressions
24	Ratios & Proportional Relationships	Represent percentages as fractions				
25	Other	Write improper fractions as mixed numbers	Level II	Numeration	Concept Cluster 4~ Investigating Fractions	Lesson 2~Simplifying Fractions
26	Other	Choose appropriate units of measurement	Level II	Measurement	Concept Cluster 1~ Estimating and Measuring Length, Distance, Area, and Weight	Lesson 3~Estimating and Measuring Area
27	Expressions & Equations	Apply the order of operations				
28	Other	Round a decimal	Level II	Numeration	Concept Cluster 5~ Exploring Decimal Numbers	Lesson 4~Estimating and Rounding Decimal Values
29	Statistics & Probability	Find the mean	Level II	Data Analysis and Probability	Concept Cluster 3~ Exploring Graphs, Plots, and the Shape of Data	Lesson 4~Describing the Shape of a Data Distribution

Table 11. M–CAP Grade 6 and *digits* Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding *digits* Lesson
1	Operations & Algebraic Thinking	Solve multiplication equations	Grade 6 Lesson 3-4
2	Measurement & Data	Compare numbers	Intervention Lesson 1-2
3	Number & Operations—Fractions	Compare fractions	Intervention Lesson 9-3
4	Measurement & Data	Choose appropriate units of measurement	
5	Other	Identify the parts of a region	
6	Other	Find a numeric pattern	Intervention Lesson 23-3
7	Other	Interpret data from a bar graph	
8	Geometry	Identify angle measurements in a triangle	Intervention Lesson 19-1
9	Other	Identify place value	Intervention Lesson 1-1
10	Expressions & Equations	Solve a two-step equation	Intervention Lesson 25-7
11	The Number System	Compare decimals and fractions	Intervention Lesson 9-5
12	Other	Find combinations	
13	Ratios & Proportional Relationships	Convert metric units of length	Intervention Lesson 14-3
14	Ratios & Proportional Relationships	Find least common multiples	Grade 6 Lesson 2-6
15	Expressions & Equations	Write algebraic expressions	Grade 6 Lesson 1-2
16	Other	Identify place value	Intervention Lesson 1-1
17	Ratios & Proportional Relationships	Convert customary units of weight	Intervention Lesson 14-2
18	Other	Estimate decimal sums	Intervention Lesson 7-1
19	Other	Identify parts of a circle	Grade 7 Lesson 11-1
20	The Number System	Compare and order fractions	Intervention Lesson 9-3
21	Other	Estimate the sums of whole numbers	
22	The Number System	Find greatest common factor	Grade 6 Lesson 2-6
23	Expressions & Equations	Write algebraic expressions	Grade 6 Lesson 1-2
24	Ratios & Proportional Relationships	Represent percentages as fractions	Grade 6 Lesson 12-3
25	Other	Write improper fractions as mixed numbers	Intervention Lesson 12-1
26	Other	Choose appropriate units of measurement	
27	Expressions & Equations	Apply the order of operations	Intervention Lesson 23-1
28	Other	Round a decimal	Intervention Lesson 6-3
29	Statistics & Probability	Find the mean	Grade 6 Lesson 16-2

Table 12. M–CAP Grade 7 and *digits* Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding *digits* Lesson
1	The Number System	Order rational numbers	Intervention Lesson 22-5
2	Ratios & Proportional Relationships	Calculate rate	Grade 7 Lesson 1-2
3	Expressions & Equations	Solve an equation	Grade 7 Lesson 8-1
4	Other	Estimate length in metric units	
5	Other	Complete a number sequence	
6	Other	Compare fractions	Intervention Lesson 9-3
7	Expressions & Equations	Apply the associative property of addition	Intervention Lesson 2-1
8	Other	Complete a number sequence	
9	Statistics & Probability	Determine the probability of an event	Grade 7 Lesson 16-1
10	The Number System	Compare rational numbers	Intervention Lesson 22-5
11	Geometry	Identify the diameter of a circle	Grade 7 Lesson 11-1
12	Expressions & Equations	Solve a two-step equation	Grade 7 Lesson 8-3
13	The Number System	Identify the number with the greatest value	Intervention Lesson 22-5
14	Other	Estimate speed in metric units	
15	Other	Compare whole numbers	Intervention Lesson 1-2
16	Expressions & Equations	Apply the associative property of multiplication	Intervention Lesson 2-1
17	Expressions & Equations	Solve a two-step equation	Grade 7 Lesson 8-3
18	The Number System	Find the greatest common factor	Grade 6 Lesson 2-4
19	Ratios & Proportional Relationships	Find the percentage of a number	Grade 7 Lesson 3-2
20	Expressions & Equations	Apply order of operations	Intervention Lesson 23-1
21	Other	Find the perimeter of a rectangle	Intervention Lesson 20-1
22	Other	Estimate the sum of whole numbers	
23	Other	Round a decimal	Intervention Lesson 6-3
24	Other	Estimate the difference of whole numbers	
25	Other	Complete a number sequence	
26	Statistics & Probability	Find the mean	Grade 6 Lesson 16-2
27	Other	Round a decimal	Intervention Lesson 6-3
28	Expressions & Equations	Solve an equation	Grade 7 Lesson 8-1
29	Expressions & Equations	Write and solve a two-step equation	Grade 7 Lesson 8-5
30	Expressions & Equations	Solve an equation with a variable on both sides of the equal sign	Grade 8 Lesson 2-2
31	Geometry	Find the circumference of a circle	Grade 7 Lesson 11-2

Table 13. M–CAP Grade 8 and *digits* Curriculum Reference

Item #	Common Core Domain	Skill Addressed	Corresponding *digits* Lesson
1	Other	Compare and order decimals	Intervention Lesson 6-2
2	Other	Use scale models	Grade 7 Lesson 2-5
3	Expressions & Equations	Solve two-step equations	Grade 8 Lesson 2-1
4	Other	Complete a number sequence	
5	Other	Find the difference between two 5-digit numbers	
6	Other	Calculate ratio and rate	Intervention Lesson 14-1
7	Expressions & Equations	Solve a two-step equation	Grade 8 Lesson 2-1
8	Expressions & Equations	Evaluate expressions with exponents	Grade 6 Lesson 1-5
9	The Number System	Order rational numbers	Intervention Lesson 22-5
10	Other	Use scale models	Grade 7 Lesson 2-5
11	The Number System	Evaluate expressions with exponents	Grade 6 Lesson 1-5
12	Expressions & Equations	Recognize a number written in scientific notation	Grade 8 Lesson 4-1
13	Geometry	Apply the Pythagorean theorem	Grade 8 Lesson 12-3
14	Expressions & Equations	Apply the order of operations	Intervention Lesson 23-1
15	The Number System	Apply the order of operations	Intervention Lesson 23-1
16	Expressions & Equations	Solve a two-step equation	Grade 8 Lesson 2-1
17	Expressions & Equations	Identify an algebraic expression	Grade 6 Lesson 1-3
18	Expressions & Equations	Apply the order of operations	Intervention Lesson 23-1
19	Geometry	Identify angle measurements in a triangle	Grade 8 Lesson 11-3
20	Expressions & Equations	Write a number in scientific notation	Grade 8 Lesson 4-2
21	Geometry	Find the measure of a supplementary angle	Grade 7 Lesson 10-4
22	Expressions & Equations	Write a number in scientific notation	Grade 8 Lesson 4-2
23	Expressions & Equations	Write algebraic expressions	Grade 6 Lesson 1-3
24	Geometry	Apply the Pythagorean theorem	Grade 8 Lesson 12-3
25	Expressions & Equations	Change a number from scientific notation to standard form	Grade 8 Lesson 4-2
26	Statistics & Probability	Determine theoretical probability	Grade 7 Lesson 16-4
27	Other	Find the least common multiple of two numbers	Grade 6 Lesson 2-6
28	Other	Draw a logical conclusion	Grade 6 Lesson 4-2