

## **ALGEBRA READINESS AND THE GENERAL MATH CST**

### **Purpose:**

The purpose of this document is to increase awareness of a potential discrepancy between state adopted Algebra Readiness programs and the corresponding CST test on which students, schools, and districts will be assessed and held accountable. It is possible that our analysis on this matter has already been accounted for in some way and/or there is an error in the logic presented in this document. Please send any corrections and/or additions to ([keith@pacent.org](mailto:keith@pacent.org)) so that we can update interested parties.

### **Algebra Readiness Standards:**

Included in this year's math adoption is a new course called "Algebra Readiness." (Math Framework page 365).<sup>1</sup> The general adoption criteria are specified in chapter 10 of the math framework and more specific adoption criteria can be found in the "Standards Map for an Algebra Readiness Program (Grade 8)" on the web.<sup>2</sup> There are 16 targeted standards (13 from math 7 and 3 from Algebra).

### **CST for Algebra Readiness:**

Currently 8<sup>th</sup> grade students in any course other than Algebra I (Including Algebra Readiness) take the General Math CST. Assessment blueprints for each CST are available from the California Department of Education (<http://www.cde.ca.gov/ta/tg/sr/blueprints.asp>), which provides a detailed item and frequency analysis for each CST assessment.

### **Analysis of alignment between the General Math blueprint and the General Math standards:**

When we compared the Course standards for "Algebra Readiness" with the General Math CST Blueprint we found a discrepancy (Table A). It appears that approximately 69% of the content on the General Math CST is accounted for by the "Algebra Readiness" standards. The standards identified in Algebra Readiness may not be enough to support students in testing proficient on the General Math CST.

### **Recommendation:**

Districts need to do a thorough analysis of Algebra Readiness materials against both the Algebra Readiness course standards and the General Math CST Blueprint. Prior to making an adoption decision it is important to identify key areas that may need to be supplemented. As we review publisher programs we will post recommendations for supplementing on our web page. ([www.pacent.org](http://www.pacent.org)).

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<sup>1</sup> Math Framework refers to "Mathematics Framework for California Public Schools K-12 published 2006

<sup>2</sup> <http://www.cde.ca.gov/ci/ma/im/documents/algreadstanmap.doc>

Algebra Readiness Course Analysis Relative to General Math CST

TABLE A

General Math CST Analysis							Covered by Algebra or Reference Standards
Standards	Gen Math CST Blueprint (Actual # of question & % of test)		Math 7 Standards (Coverage of Gen Math Standards)		Algebra Readiness Standards (Coverage of the Alg Readiness Standards)		
	Questions Covered	% of Gen Math CST	Questions Covered	% of Gen Math CST	Questions Covered	% of Gen Math CST	
	<b>65</b>	<b>100.0%</b>	<b>60</b>	<b>92.3%</b>	<b>45</b>	<b>69.2%</b>	
7 NS 1.1	1.00	1.5%	x	1.5%		0.0%	
7 NS 1.2*	4.00	6.2%	x	6.2%	x	6.2%	
7 NS 1.3	4.00	6.2%	x	6.2%	x	6.2%	
7 NS 1.4*			x	0.0%		0.0%	
7 NS 1.5*	2.00	3.1%	x	3.1%	x	3.1%	
7 NS 1.6	1.00	1.5%	x	1.5%	R	1.5%	6 NS 1.4
7 NS 1.7*	2.00	3.1%	x	3.1%	R	3.1%	6 NS 1.4
7 NS 2.1	1.00	1.5%	x	1.5%	x	1.5%	
7 NS 2.2*	4.00	6.2%	x	6.2%	R	6.2%	6 NS 2.1
7 NS 2.3*	2.00	3.1%	x	3.1%	A	3.1%	A1 2.0
7 NS 2.4	1.00	1.5%	x	1.5%	A	1.5%	A1 2.0
7 NS 2.5*	2.00	3.1%	x	3.1%		0.0%	Likely covered
7 AF 1.1	3.00	4.6%	x	4.6%	x	4.6%	
7 AF 1.2	3.00	4.6%	x	4.6%	A	4.6%	A1 4.0
7 AF 1.3*	2.00	3.1%	x	3.1%	x	3.1%	
7 AF 1.4			x	0.0%	A	0.0%	A1 4.0
7 AF 1.5	1.00	1.5%	x	1.5%		0.0%	
7 AF 2.1	1.00	1.5%	x	1.5%	x	1.5%	
7 AF 2.2	1.00	1.5%	x	1.5%	A	1.5%	A1 2.0
7 AF 3.1	1.00	1.5%	x	1.5%		0.0%	
7 AF 3.2			x	0.0%		0.0%	
7 AF 3.3*	2.00	3.1%	x	3.1%	x	3.1%	
7 AF 3.4*	1.00	1.5%	x	1.5%	x	1.5%	
7 AF 4.1*	4.00	6.2%	x	6.2%	x	6.2%	
7 AF 4.2*	2.00	3.1%	x	3.1%	x	3.1%	
7 MG 1.1	1.00	1.5%	x	1.5%		0.0%	
7 MG 1.2	1.00	1.5%	x	1.5%		0.0%	
7 MG 1.3*	2.00	3.1%	x	3.1%	x	3.1%	
7 MG 2.1	1.00	1.5%	x	1.5%		0.0%	
7 MG 2.2	1.00	1.5%	x	1.5%		0.0%	
7 MG 2.3	0.50	0.8%	x	0.8%		0.0%	
7 MG 2.4	0.50	0.8%	x	0.8%		0.0%	
7 MG 3.1			x	0.0%		0.0%	
7 MG 3.2	1.00	1.5%	x	1.5%		0.0%	
7 MG 3.3*	3.00	4.6%	x	4.6%	x	4.6%	
7 MG 3.4*	0.00	0.0%	x	0.0%		0.0%	
7 MG 3.5	0.00	0.0%	x	0.0%		0.0%	
7 MG 3.6*	0.00	0.0%	x	0.0%		0.0%	
6 PS 1.1	1.00	1.5%		0.0%		0.0%	
6 PS 2.5*	1.00	1.5%		0.0%		0.0%	
6 PS 3.1*	1.00	1.5%		0.0%		0.0%	
6 PS 3.3*	1.00	1.5%		0.0%		0.0%	
6 PS 3.5*	1.00	1.5%		0.0%		0.0%	
7 PS 1.1	1.00	1.5%	x	1.5%		0.0%	
7 PS 1.2	1.00	1.5%	x	1.5%		0.0%	
7 PS 1.3	2.00	3.1%	x	3.1%		0.0%	
A1 2.0*				0.0%	x	0.0%	
A1 4.0*				0.0%	x	0.0%	
A1 5.0*				0.0%	x	0.0%	

\* indicates key standards

→ Dark gray highlighting indicates standards that are not a part of the General Math Blue Print, but are included in either the Math 7 standards and/or the Algebra Readiness standards.

→ Yellow highlight Cells indicate the numer of questions accounted for on the General Math CST.

→ Blue Highlight Cells indicate the % of the questions on the General Math CST covered.

TABLE B

## Algebra Readiness Standards (Page 365 of The California Math Framework)

Referenced Standards from Foundational Skills and Concepts	16 Targeted Standards for Algebra Readiness
<b>Topic 1 Whole Numbers</b> <i>3 NS 1.3    3 NS 1.5</i>	<b>Topic 4 Operations on Rational Numbers</b> <i>7 NS 1.2    7 NS 1.3    7 NS 1.5    7 NS 2.1</i> <i>7 AF 2.1</i>
<b>Topic 2 Operations on Whole Numbers</b> <i>2 AF 1.1</i> <i>3 AF 1.5</i> <i>4 NS 3.1    4 NS 3.2</i> <i>5 AF 1.3</i>	<b>Topic 6 Equations and Functions</b> <i>7 AF 1.1    7 AF 1.3    7 AF 4.1    7 AF 4.2</i>
<b>Topic 3 Rational Numbers</b> <i>5 NS 1.4</i> <i>6 NS 1.1</i>	<b>Topic 7 The Coordinate Plane</b> <i>7 MG 3.3</i>
<b>Topic 4 Operations on Rational Numbers</b> <i>6 NS 1.4    6 NS 2.0    6 NS 2.1    6 NS 2.2</i>	<b>Topic 8 Graphing Proportional Relationships</b> <i>7 AF 3.3    7 AF 3.4</i> <i>7 MG 1.3</i>
<b>Topic 5 Symbolic Notation</b> <i>4 AF 1.2    4 AF 1.3</i> <i>5 AF 1.0</i> <i>6 AF 1.0    6 AF 1.1</i>	<b>Algebra I</b> <b>Topic 9 Algebra (Introductory Examples)</b> <i>A1-2.0    A1-4.0    A1-5.0</i>
<b>Topic 6 Equations and Functions</b> <i>4 AF 1.5    4 AF 2.0    4 AF 2.1    4 AF 2.2</i>	
<b>Topic 7 The Coordinate Plane</b> <i>4 MG 2.0    4 MG 2.1    4 MG 2.2    4 MG 2.3</i> <i>5 AF 1.4</i>	

The Mathematic Reasoning (MR) standards included in the Algebra Readiness course, are listed on page 340 of the California Math Framework. It appears that all MR standards are referenced. However, MR standards are always embedded within question from the other strands.