

Massachusetts Curriculum Matrix Summary

Introduction

The Curriculum Matrix data in this resource kit is provided as a guide to help educators in planning curriculum and instruction. All interpretations of state standards, Common Core State Standards, and state assessment program data that were needed to construct the correlations in this Matrix were conducted by content area specialists in each discipline and reviewed by research managers. Where and if necessary, interpretations of the learning statements used in the correlations were verified by third-party reviewers and/or officials of the state's department of education. Every effort has been made to ensure the accuracy of the crosswalk and summary data. However, some learning outcome statements are, by their nature, subject to interpretation and determination of intent by content area specialists. Educators should always exercise their own best judgment in determining how to apply the data.

Care was taken to ensure that all data used in the analyses was current at the time of publication, but all standards and assessment data remain subject to updates as states revise or update their state standards or assessment programs. The International Center welcomes your feedback, advice, and suggestions about the data provided. The Center also eagerly encourages users to help us keep the data current for all educators in their state by advising us of any such updates. Please address all comments to: International Center for Leadership in Education, 1587 Route 146, Rexford, NY 12148 or info@LeaderEd.com.

Massachusetts Comprehensive Assessment System

The Massachusetts Comprehensive Assessment System (MCAS) is designed to measure the performance of all public school students in Massachusetts based on the Massachusetts Curriculum Framework learning standards and to report on the performance of individual students, schools, and districts.

As required by the *Education Reform Law*, students must pass the Grade 10 tests in English language arts (ELA) and mathematics as one condition of eligibility for a high school diploma (in addition to fulfilling local requirements).

English Language Arts

The Massachusetts English language arts curriculum emphasizes reading and writing skills across all grade levels as organized in four strands: Language, Reading and Literature, Composition, and Media. The strands are separated into general standards and learning standards.

Testing Priority Designation

Information necessary to make priority designations relative to assessments was obtained from the Massachusetts Department of Education website. The test blueprints and released test items can be accessed at this site. *Release of Spring 2010 MCAS Test Items* reveals the level of representation given on the test to each standard. The number of test items per standard at each grade level was averaged. Standard deviations (STD) were calculated for each grade level and subtracted from the mean. This number established the cut-off point between Medium (M) priority designations and High (H) priority designations. Learning standards that were not tested were assigned a Low (L) priority designation. The results can be found in Table 1.

Table 1. English Language Arts Priority Designation Data

Grade	Mean	STD	Mean – STD	Designations		
				L = Low	M = Medium	H = High
3	4.10	2.95	1.15	0	1	>1
4	2.33 ¹	1.55	0.79	0	1	>1
5	5.00	3.28	1.72	0	1-2	>2
6	5.00	2.18	2.82	0	1-3	>3
7	5.71	4.06	1.65	0	1-2	>2
8	2.35 ¹	2.38	0.87	0	1	>1
9-10	2.64 ¹	2.19	0.45	0	1	>1

English language arts summary data is presented in Table 2.

Table 2. English Language Arts Assessment Data Summary

English Language Arts			NESS ⁱⁱ			MCAS		
Grade	Strands	Learning Standards	H	M	L	H 1-19	M 20-38	L 39-50
3	2	68	40	16	12	34	3	31
4	2	69	47	15	7	30	13	26
5	2	55	26	18	11	18	3	34
6	2	52	30	14	8	20	3	29
7	2	53	27	16	10	18	1	34
8	2	59	33	19	7	21	11	27
9-10	2	46	29	10	7	10	18	18
Totals	14	402	232	108	62	151	52	199

Mathematics

The Massachusetts mathematics curriculum is organized into following strands of mathematical content: Number Sense and Operations; Patterns, Relations, and Algebra; Geometry; Measurement; and Data Analysis, Statistics, and Probability. Each strand is organized into general standards and learning standards.

Testing Priority Designation

Information necessary to make priority designations relative to assessments was obtained from the Massachusetts State Department of Education website. Test blueprints and released test items can be accessed at this site. *Release of Spring 2010 MCAS Test Items* reveals the level of representation given on the test to each standard. The number of test items per standard at each grade level was averaged. Standard deviations (STD) were calculated for each grade level and subtracted from the mean. This number established the cut-off point between Medium (M) priority designations and High (H) priority designations. Learning standards that were not tested were assigned a Low (L) priority designation. The results can be found in Table 3.

Table 3. Mathematics Priority Designation Data

Grade	Mean	STD	Mean – STD	Designations		
				L = Low	M = Medium	H = High
3	7.20	3.12	4.08	0	1-4	>4
4	8.40	4.76	3.64	0	1-4	>4
5	8.40	4.08	4.32	0	1-4	>4
6	8.20	4.79	3.41	0	1-3	>3
7	8.40	3.72	4.68	0	1-5	>5
8	8.40	4.06	4.32	0	1-4	>4
10	8.40	2.03	6.34	0	1-6	>6

Mathematics summary data is presented in Table 4.

Table 4. Mathematics Assessment Data Summary

Mathematics			NESS ²			MCAS		
Grade	Strands	Learning Standards	H	M	L	H 1-16	M 17-42	L 43-70
3	5	33	18	15	0	22	4	7
4	5	44	27	16	1	26	7	11
5	5	35	20	15	0	28	4	3
6	5	43	25	17	1	30	0	13
7	5	28	20	7	1	22	0	6
8	5	39	26	10	3	23	7	9
10	5	32	18	13	1	15	7	10
Totals	35	254	154	93	7	166	29	59

Science

The Massachusetts science and technology curriculum content is organized into the following strands: Earth and Space Science, Life Science (Biology), Physical Sciences (Chemistry and Physics), and Technology/Engineering. Each strand is organized into general standards and learning standards.

Testing Priority Designation

Information necessary to make priority designations relative to assessments was obtained from the Massachusetts State Department of Education website. Test blueprints and released test items can be accessed at this site. *Release of Spring 2010 MCAS Test Items* reveals the level of representation given on the test to each standard. The number of test items per standard at each grade level was averaged. Standard deviations (STD) were calculated for each grade level and subtracted from the mean. This number established the cut-off point between Medium (M) priority designations and High (H) priority designations. Learning standards that were not tested were assigned a Low (L) priority designation. The results can be found in Table 5.

Table 5. Science Priority Designation Data

Grade/Subject	Mean	STD	Mean – STD	Designations		
				L = Low	M = Medium	H = High
3-5	13.50	3.28	10.22	0	1-10	>10
6-8	14.00	0.00	14.00	0	1-13	>13
Introductory Physics	15.00	5.61	9.39	0	1-9	>9
Technology/Engineering	15.00	3.00	12.00	0	1-12	>12
Biology	12.00	1.90	10.10	0	1-10	>10
Chemistry	15.00	2.12	12.88	0	1-13	>13

Science summary data is presented in Table 6.

Table 6. Science Assessment Data Summary

Science			NESS ²			MCAS		
Grade/Subject	Strands	Learning Standards	H	M	L	H 1-32	M 33-50	L 51-85
3-5	4	45	24	9	12	35	5	5
6-8	4	73	33	18	22	40	0	33
Biology	6	32	26	2	4	21	5	6
Chemistry	8	41	6	5	30	40	0	1
Introductory Physics	6	31	7	15	9	31	0	0
Technology/Engineering	7	33	11	12	10	19	14	0
Totals	35	255	107	61	87	186	24	45

Totals for MCAS Tested English Language Arts, Mathematics, and Science

Table 7 presents the number of learning standards compared to the number of learning standards tested. Using this data, the percentage of learning standards tested was calculated.

Table 7. Total Percentage for all MCAS Grade Levels in English Language Arts, Mathematics, and Science and Technology

	Number of Learning Standards Tested	Number of Learning Standards	% of Learning Standards Tested
English LA	203	402	50.50
Mathematics	195	254	76.78
Science	168	255	65.81
Total	566	911	62.63