



MISSISSIPPI CORRESPONDENCE STUDY

THE STUDY
BETWEEN THE MISSISSIPPI COLLEGE-AND- CAREER
READINESS STANDARDS AND THE MISSISSIPPI ENGLISH
LANGUAGE PROFICIENCY STANDARDS



MISSISSIPPI
DEPARTMENT OF
EDUCATION

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Executive Summary

This report provides the results of the correspondence study completed for the [Mississippi English Language Proficiency Standards](#) (MS ELP) and the [Mississippi College-and Career-Readiness Standards \(MS-CCR\)](#) in English language arts (ELA), mathematics, and science which was conducted in Jackson, Mississippi on January 17-19, 2023, and virtually March 6, 2023, March 30, 2023, and April 4, 2023. In the fall of 2024 and the winter of 2025, the raw data was sorted and placed into user friendly charts was conducted virtually. The initial phase of the study was adapted from the alignment methodology utilized by Webb (1997) following examples from Cook (2005, 2006, and 2007). The study was conducted to provide evidence of standards-to-standards correspondence as required by the U.S. Department of Education (2018). The standards covered on state content assessments are documented in the MS Academic Assessment Program (MAAP) English Language Arts Updated Blueprints and the MAAP Mathematics Updated Blueprints (2016).

Alignment, Linking, and Correspondence

Federal guidance recommends two forms of criteria to demonstrate the correspondence of state content standards and state English language proficiency standards. Those criteria are linking and alignment. Linking is the minimum criterion, and alignment is the higher criterion. (U.S. Department of Education, Office of English Language Acquisition, February 2003).

This study was designed to collect expert judgments of panelists (from Mississippi school districts) to provide evidence of linking and correspondence to criteria used to evaluate the relationship between the MS ELP standards and the MS-CCR academic standards in ELA, mathematics, and science.

Alignment is demonstrated by the combination of linking and correspondence following Cook's methodology in which

- linking refers to a match between the MS ELP standard and the MS-CCR standard, while
- correspondence refers to depth and breadth of coverage within a skill area.

Depth examines the cognitive complexity of a standard (how complexly a person thinks about a particular issue or the number of cognitive processes required to complete a task), while breadth examines the distribution of linking among goals within a standard. A goal is a subtopic or focal area within a standard. For example, the Grade 7 standards for ELA Reading include four goals: key ideas and details, craft and structure, integration of knowledge and ideas, and range of reading and level of text complexity (see Table 1). The ten content standards within the Grade 7 ELA reading standards address these four different goals. These aspects of the study were measured by linking, depth of knowledge (DOK), consistency (depth), and coverage (breadth).



Table 1: Grade 7 Example

Grade Level	Goals	Measured by
Grade 7 ELA reading standards	1. Key ideas and details 2. Craft and structure 3. Integration of knowledge and ideas 4. Range of reading and level of text complexity	1. Linking 2. Depth of Knowledge (DOK) 3. Consistency (depth) 4. Coverage (breadth)

To complete this correspondence (following the Webb method) panelists were tasked with:

In phase one

1. independently assigning a DOK to each MS- CCRS standard, then
2. discussing these independent assignments in their group to reach consensus on DOKs for each standard, repeating the process for each grade level.

In phase two, panelists worked independently to:

1. assign a DOK to each MS ELP standard, and then
2. select up to three MS-CCR standards to correspond to each MS ELP standard, repeating the process for each grade level.

Proportional Alignment

English Language Arts Proportional Alignment

Table 2 represents the proportion of alignment criteria met across the grade clusters in ELA as a whole. The linking percentages were determined by the percentage of grades in the cluster that had at least one MS ELP standard that linked to the MS-CCR ELA standard. The DOK was determined by the percentage of grades that met or exceeded the minimum DOK criterion level of 40%. Coverage was determined by the percentage of grades that met the moderate or strong levels of coverage.

Overall scores were determined by adding all the reported areas with linkage, qualifying DOK levels, or moderate or strong coverage and then determining the percentage of each area to the total areas reported on within the content area.

Table 2 Proportion of Alignment Criteria Met across Clusters in English Language Arts				
		Correspondence		
Grade Cluster	Standards	Linking	DOK	Coverage
K-2	Reading Literature	100%	100%	33%
	Reading Informational Text	100%	100%	100%
	Foundational Skills	67%	67%	0%
	Writing	100%	67%	100%
	Speaking and Listening	100%	100%	100%



	Language	100%	100%	100%
3-5	Reading Literature	100%	100%	100%
	Reading Informational Text	100%	100%	100%
	Foundational Skills	0%	0%	0%
	Writing	100%	100%	100%
	Speaking and Listening	100%	100%	100%
	Language	100%	100%	100%
6-8	Reading Literature	100%	100%	100%
	Reading Informational Text	100%	100%	100%
	Writing	100%	67%	100%
	Speaking and Listening	100%	100%	100%
	Language	100%	100%	100%
9-12	Reading Literature	100%	100%	100%
	Reading Informational Text	100%	100%	100%
	Writing	100%	100%	100%
	Speaking and Listening	100%	0%	100%
	Language	100%	100%	100%
Overall		67 of 71 = 94%	62 of 71 = 87%	63 of 71 = 89%

Mathematics Proportional Alignment

Table 3 represents the proportion of alignment criteria met across the grade clusters in mathematics as a whole. The linking percentages were determined by the percentage of grades in the cluster that had at least one MS ELP standard that linked to the MS-CCR standard. The DOK was determined by the percentage of grades that met or exceeded the minimum DOK criterion level of 40%. Coverage was determined by the percentage of grades that met the moderate or strong levels of coverage.

Overall scores were determined by adding all the reported areas with linkage, qualifying DOK levels, or moderate or strong coverage and then determining the percentage of each area to the total areas reported on within the content area.

Table 3 Proportion of Alignment Criteria Met across Clusters in Mathematics				
Correspondence				
Grade Cluster	Standards	Linking	DOK	Coverage
K-2	CC: Counting and Cardinality	100%	100%	100%
	OA: Operations and Algebraic Thinking	100%	100%	100%
	NBT: Number and Operations in Base Ten	100%	100%	100%
	MD: Measurement and Data	100%	100%	100%



	G: Geometry	100%	100%	100%
3-5	OA: Operations and Algebraic Thinking	100%	100%	100%
	NBT: Number and Operations in Base Ten	67%	67%	67%
	NF: Number and Operations - Fractions	100%	0%	100%
	MD: Measurement and Data	100%	67%	100%
	G: Geometry	100%	100%	100%
6-8	Ratios and Proportional Relationships	100%	84%	100%
	The Number System	100%	100%	100%
	Expressions and Equations	100%	100%	100%
	Functions	100%	100%	100%
	Geometry	100%	100%	100%
	Statistics and Probability	67%	67%	67%
9-12	Number and Quantity	100%	100%	100%
	Algebra	100%	100%	100%
	Functions	100%	0%	0%
	Statistics and Probability	100%	0%	100%
Overall		45 of 47 = 96%	39 of 47 = 83%	44 of 47 = 94%

Science Proportional Alignment

Table 4 represents the proportion of alignment criteria met across the grade clusters in science as a whole. The linking percentages were determined by the percentage of grades in the cluster that had at least one MS ELP standard that linked to the MS-CCR standard. The DOK was determined by the percentage of grades that met or exceeded the minimum DOK criterion level of 40%. Coverage was determined by the percentage of grades that met the moderate or strong levels of coverage.

Overall scores were determined by adding all the reported areas with linkage, qualifying DOK levels, or moderate or strong coverage and then determining the percentage of each area to the total areas reported on within the content area.

Table 4 Proportion of Alignment Criteria Met across Grade Clusters in Science				
Correspondence				
Grade Cluster	Standards	Linking	DOK	Coverage
K-5	Life Science	100%	83%	100%
	Physical Science	100%	33%	100%
	Earth and Space Science	100%	83%	67%
6-8	Life Science	100%	100%	100%
	Physical Science	100%	100%	100%



	Earth and Space Science	100%	100%	100%
9-12	Cells as a System	100%	100%	100%
	Energy Transfer	100%	0%	100%
	Reproduction and Heredity	100%	100%	100%
	Adaptations and Evolution	100%	100%	100%
	Interdependence of Organisms and their Environments	100%	100%	100%
Overall		32 of 32 = 100%	27 of 32 = 84%	30 of 32 = 94%

Linking Results

The study results suggest adequate linkage across all grade clusters between the MS ELP standards and the MS-CCR standards in ELA (reading, writing, listening and speaking, and language), mathematics, and science. In ELA 94% of the MS-CCR ELA standards were linked to a MS ELP standard. Strong linkage was found for most areas of reading and all areas of writing, speaking and listening, and language. Limited linkage was found for reading foundational skills in grades K-5 and reading literature in grades 2-3.

In mathematics strong linkage was found in almost all areas. Limited linkage was found in grade 3 number and operations in base ten, grade 8 statistics and probability, and functions in Algebra I (grades 9-12). In science, 100% of the MS-CCR science standards linked to the MS ELP standards. Strong linkage was found for all areas except grades 4 and 5 Earth and space science which had limited linkage.

Correspondence Results

The depth of knowledge (DOK) was strongly met in almost all areas. Eighty-seven percent (87%) of the MS-CCR ELA standards DOK matched the MS ELP standards. Areas in ELA with less than 40% DOK were writing in grades 1 and 8 and speaking and listening in English I, II, III, and IV. Eighty-three percent (83%) of the MS-CCR mathematics standards DOK matched the MS ELP standards. Areas in mathematics that did not meet the 40% threshold were number operations in base ten for grade 3 and number operations in fractions for grades 3, 4, and 5, and functions and statistics and probability in Algebra I (grades 9-12). Eighty-four percent (84%) of the MS-CCR science standards matched the DOK of the MS ELP standards. Areas in science with less than 40% DOK correlation were: physical science in grades K-3, Earth and space science in grade 5, and energy transfer in Biology grades 9-12.



Coverage was strong in almost all areas. The MS ELP standards were found to have 89% overall standards coverage in English language arts (ELA), and 94% overall coverage for both mathematics and science. In ELA limited coverage was found in reading foundational skills in grades K-5 and reading literature in grades 1 and 7. In mathematics, limited coverage was found in grade 8 statistics and probability, and functions in Algebra I (grades 9-12). In science, limited coverage was found in grades 4 and 5 Earth and space science.

Summary of Alignment/Correspondence Findings

Summary of Findings

Findings from the correspondence study suggest that there is adequate linking between the Mississippi English Language Proficiency (MS ELP) standards and the Mississippi College- and Career- Readiness (MS-CCR) standards in English language arts (ELA), mathematics and science.

For ELA there is a substantial linkage between the MS ELP standards and the MS-CCR standards in reading literature, reading informational text, writing, speaking and listening, and language. Linkage was found across all grades in reading, writing, speaking and listening, and language. However, there was no linkage found for reading foundational skills to the MS ELP standards.

Correspondence DOK was consistently found in reading, listening and speaking, language, and writing with the following exceptions: reading foundational skills for grades 2-5 due to lack of linkage, writing in grades 1 and 7, and speaking and listening in grades 9-12.

Coverage was strong in all areas of writing, speaking and listening, language, and reading literature in grades K and 3-12, and reading informational text in all grades. The following exceptions were noted: reading literature in grades 1 and 2 and reading foundational skills in grades K-5. These exceptions were limited in coverage.

For mathematics there was considerable linkage with only grade 3 number operations in base ten and grade 8 statistics and probability lacking linkage.

Correspondence DOK for mathematics was also consistently found across all grade levels with the exception of number and operations in base ten for grade 3, number and operations in fractions for grades 3, 4, and 5, measurement data in grade 3, statistics and probability in grade 8 and Algebra I (grades 9-12), and functions in Algebra I (grades 9-12).

Coverage was strong in most grade levels and grade clusters in mathematics except for the following areas where coverage was limited: grade 3 number and operations in base ten, grade 8 statistics and probability, and functions in Algebra I.

Science linkage between the MS ELP standards and MS-CCR science standards is found for all standards and across all grade levels.



Correspondence DOK was consistently found in life science in grades K, 1, and 3-8 but was not found in grade 2; DOK was also met in physical science in grades 4-8 but was not met in grades K-3; in Earth and space science DOK was also met in grades 1-4 and 6-8 but was not met in grade 5; DOK was also met in Biology (9-12) for cells as a system, reproduction and heredity, adaptations and evolution, and interdependence of organisms and their environments but was not met for energy transfer.

Coverage was strong in life science and physical science in grades K-8 and strong in Earth and space science in grades K-3, and 6-8 but, was limited in grades 4 and 5. Coverage was also strong in all areas in Biology (9-12). Federal guidance on the correspondence between the state content and the state ELP standards states that the state must demonstrate linkage to ELA, mathematics, and science. The panelist's ratings demonstrate that there is an overall 94% linkage between the MS-CCR ELA standards and the MS ELP standards, 96% linkage in mathematics and the MS ELP standards, and an overall 100% linkage in science and the MS ELP standards. There is also an overall 87% DOK in ELA, an overall 83% DOK in mathematics, and an overall 84% DOK in science. Overall coverage percentages are: 89% for ELA, 94% for mathematics, and 94% for science.



Introduction

This report provides the results of a study conducted to establish a correspondence between the Mississippi (MS) College and Career Readiness (CCR) Standards in English language arts (ELA), mathematics, and science for grades K-12 and the Mississippi English Language Proficiency (MS ELP) standards. Detailed information on the process used for determining the correspondence is also included in this report.

For this study, meetings were held in-person in Jackson, Mississippi on January 17-19, 2023. Additional sessions were held virtually on March 6, 2023, March 30, 2023, and April 4, 2023. The virtual data collection sessions were conducted for the K-5 Math correspondence to address a deviation from the study methodology. This deviation is described in more detail in the methodology section of this report that details the K-5 Mathematics section. Throughout the report, the results of both data collection efforts are presented together.

This study was conducted to provide evidence of standards-to-standards correspondence as defined by guidance for assessment peer review from the U.S. Department of Education (2018). Critical Element 1.2 provides the following description:

Evidence that the ELP standards must contain language proficiency expectations that reflect the language needed for ELs to acquire and demonstrate their achievement of the knowledge and skills identified in the State's academic content standards appropriate to each grade-level/grade-band in at least reading/language arts, mathematics, and science.

Evidence of the appropriateness and sufficiency of Mississippi's ELP Standards is presented here in the form of results of a correspondence study conducted with state educators.

The study included both virtual and in-person meetings for 39 panelists, 6 Mississippi Department of Education staff members, and 5 Region 7 Comprehensive Center (R7CC) team members. The R7CC team members included partners from the Center for Applied Linguistics (CAL). The meetings were conducted to facilitate panelists as they familiarized themselves with both the MS ELP and MS CCR standards and the directions for conducting the study. The in-person study included three phases:

1. In the first phase of the study, training and beginning group work for determining the DOK of each MS CCR standard kindergarten through grade 12 in English language arts (ELA), mathematics, and science was completed. In this phase, panelists independently assigned a DOK to each MS-CCR standard and then held group discussions to reach consensus on DOKs for each standard. This process was repeated for each grade level.
2. In the second phase, individual panelists worked to determine if a DOK match and linkage were met for the MS ELP and MS CCR standards in each of the grades and subject areas as noted above. During this phase, panelists worked independently to assign a DOK to each MS ELP standard, and then selected up to three MS-CCR standards that corresponded to each MS ELP standard. This process was repeated for each grade level.



3. Finally, after the completion of each grade level in the second phase, panelists completed a survey about the process and degree of alignment.

Panelist Recruitment

The recruitment goal was to include a total of 32-48 panelists who would be spread across eight total groups, to make groups composed of four to six panelists each. The call for panelists required panelists that were MS teachers or educators of English learners (ELs), or mathematics, science, or language arts content educators with experience teaching ELs. Additionally, we targeted at least one educator per group with special education experience. For the additional K-5 mathematics ELP correspondence study, the recruitment goal was to include educators of ELs, K-5 mathematics, and special education.

The recruitment of panelists to serve on the MDE's ELP correspondence panel was multi-faceted. The MDE sought to create a diverse panel to assist with the creation of a correspondence of the MS ELP standards and the MS-CCR standards in ELA, mathematics, and science. This included parents and educators from the 4 Mississippi congressional districts, the MS Band of Choctaw Indians, educators from K-12 grade levels, educators with experience with English learners, students with disabilities, and general education in ELA, math, and science.

The application and process were advertised on the MS Achieves blog and emailed on multiple MDE listservs. It was also announced on Multi-Tiered System of Supports, EL, Special Education, Secondary, other curriculum listservs, newsletters, and virtual office hours sessions as well as at various in-person meetings and trainings. For the additional K-5 mathematics study, the application specifically identified the need for educators with experience with these grade levels and with experience with the K-5 MS-CCR standards in mathematics. In addition to the announcements noted for the first study, specific efforts were made to reach out to math coaches, administrators, and curriculum specialists who would assist with recruitment of qualified educators for this specific portion of the study.

Interested applicants were asked to submit a completed application, signed by both their principal (or other direct supervisor) and the district superintendent, a letter of recommendation, their updated resume, and a copy of their educator license. This was required for both the in-person and the virtual portions of the study.

It was also strongly recommended that panel members have experience with state content and MS ELP standards. Ideally panelists would represent a broad range of districts across the state. One panelist from each group would be designated to serve as the table leader.

All application packets were reviewed by an internal panel comprised of MDE employees using a checklist with areas for annotations. Approved panelists were placed in groups based on their area(s) of licensure and expertise. Table leaders for each group were selected based on experience and interest as indicated on their application form. The list of all panelists in the study, the position they held at the time of the study, and the school district they worked for are provided at the beginning of this document.



Linking And Correspondence

To meet the U.S. Department of Education peer review requirements for ELP assessment, the study was designed to collect expert judgments of panelists to provide evidence of linking and correspondence, to criteria used to evaluate the relationship between the state’s ELP standards and the state’s academic content standards (CCRS) in ELA, math, and science (U.S. Department of Education, Office of English Language Acquisition, February 2003).

Linking refers to a match between the ELP standard and the CCR standard, while correspondence refers to depth and breadth of coverage within a skill area. Depth examines the cognitive complexity of a standard, while breadth examines the distribution of linking among goals within a standard. These aspects of the study were measured by linking, depth of knowledge (DOK), consistency (depth), and coverage (breadth).

The adapted Webb methodology used two phases. In the first phase, panelists first independently assigned a DOK to each MS-CCR standard and then held group discussions to reach consensus on DOKs for each standard. This process was repeated for each grade level. In the second phase, panelists worked independently to first assign a DOK to each MS ELP standard, and then select up to three MS-CCR standards to correspond to each MS ELP standard. This process is repeated for each grade level. After the completion of each grade level in Phase 2, panelists completed a survey about the process and degree of alignment.

Standards Included in the Study

The study links Mississippi College and Career Readiness (MS-CCR) ELA, Mathematics, and Science standards designed for state assessment with the MS ELP standards. The coverage of the standards included in the correspondence study is based on the Mississippi Academic Assessment Program’s blueprints. These documents specify the content standards that are addressed through the Mississippi Academic Assessment Program (Mississippi Department of Education, 2016). In each section below, we specify the standards included in the study and note any standards that were not included.

English Language Arts (ELA)

For ELA, the study addressed the standards noted in Table 5.

Table 5 MS-CCR ELA Standards Covered in the Correspondence Study

Reading Literature RL.1-RL.10 <ul style="list-style-type: none">Note: RL.8 will not be included in the study as it is not applicable to literature.
Reading Information Text RI.1-RI.10 <ul style="list-style-type: none">Note: RL.10 begins in grade 1.

Reading Foundational Skills RF.1-RF.4
<ul style="list-style-type: none"> Note: Reading Foundational Skills standards are only applicable for grades K-5, and RF.1 and RF.2 are only applicable for grades K-1.
Writing W.1-W.10
<ul style="list-style-type: none"> Note: W.4 and W.10 begin in grade 3. W.9 begins in grade 4.
Speaking and Listening SL.1-SL.6
Language L.1-L.6
<ul style="list-style-type: none"> Note: L.3 begins in grade 2

As noted in the table above, and consistent with other correspondence studies (e.g., Chi, Y., Garcia, R. B., Surber, C., & Trautman, L. 2011), the reading literature standard RL.8 is omitted from the study because it is not a standard that is included in the literature standards. The design of these standards uses the same ten MS-CCR anchor standards for Reading, applied to both literary and informational texts, including texts in history/social studies, science, and technical subjects (Mississippi Department of Education, 2016). Therefore, standard 8 applies only to informational texts and not literature. As it is not covered by the reading literature standards, it is not included in the study.

Another note for the MS-CCR ELA standards is that other standards correspondence studies have left off the language standard from ELA because it is fundamentally different from the ELP approach to language. We have chosen to include the MS ELA language standard in this correspondence study because educators must navigate these different approaches in classroom instruction, and we believe the results can be useful for understanding the relationship between the ELA and ELP standards.

Mathematics

Table 6 summarizes the mathematics standards included in the study.

Table 6 MS-CCR Mathematics Standards Covered in the Correspondence Study

Kindergarten	Counting and Cardinality	CC.1,2,3,4,5,6,7
	Operations and Algebraic Thinking	OA.1,2,3,4,5
	Number and Operations in Base Ten	NBT.1
	Measurement and Data	MD.1,2,3
	Geometry	G.1,2,3,4,5,6
Grade 1	Operations and Algebraic Thinking	OA.1,2,3,4,5,6,7,8



	Number and Operations in Base Ten	NBT.1,2,3,4,5,6
	Measurement and Data	MD.1,2,3,4,5
	Geometry	G.1,2,3
Grade 2	Operations and Algebraic Thinking	OA.1,2,3,4
	Number and Operations in Base Ten	NBT.1,2,3,4,5,6,7,8,9
	Measurement and Data	MD.1,2,3,4,5,6,7,8,9
	Geometry	G.1,2,3
Grade 3	Operations and Algebraic Thinking	OA.1,2,3,4,5,6,7,8,9
	Number and Operations in Base Ten	NBT.1,2,3
	Number and Operations - Fractions	NF.1,2,3
	Measurement and Data	MD.1,2,3,4,5,6,7,8
	Geometry	G.1,2
Grade 4	Operations and Algebraic Thinking	OA.1,2,3,4,5
	Number and Operations in Base Ten	NBT.1,2,3,4,5,6
	Number and Operations - Fractions	NF.1,2,3,4,5,6,7
	Measurement and Data	MD.1,2,3,4,5,6,7
	Geometry	G.1,2,3
Grade 5	Operations and Algebraic Thinking	OA.1,2,3
	Number and Operations in Base Ten	NBT.1,2,3,4,5,6,7
	Number and Operations - Fractions	NF.1,2,3,4,5,6,7
	Measurement and Data	MD.1,2,3,4,5
	Geometry	G.1,2,3,4
Grade 6	Ratios and Proportional Relationships	RP.1,2,3
	The Number System	NS.1,2,3,4,5,6,7,8,9
	Expressions and Equations	EE.1,2,3,4,5,6,7,8,9
	Geometry	G.1,2,3,4
	Statistics and Probability	SP.1,2,3,4,5
Grade 7	Ratios and Proportional Relationships	RP.1,2,3
	The Number System	NS.1,2,3
	Expressions and Equations	EE.1,2,3,4

	Geometry	G.1,2,3,4,5,6
	Statistics and Probability	SP.1,2,3,4,5,6,7,8
Grade 8	The Number System	NS.1,2
	Expressions and Equations	EE.1,2,3,4,5,6,7,8
	Functions	F.1,2,3,4,5
	Geometry	G.1,2,3,4,5,6,7,8,9
	Statistics and Probability	SP.1,2,3,4
Algebra I (9-12)	Number and Quantity	N-RN.3
		N-Q.1, 2, 3
	Algebra	A-SSE.1, 2, 3
		A-APR.1, 3
		A-CED.1, 2, 3, 4
		A-REI.1, 3, 4, 5, 6, 10, 11, 12
	Functions	F-IF.1, 2, 3, 4, 5, 6, 7, 8, 9
		F-BF.1, 3
		F-LE.1, 2, 5
	Statistics and Probability	S-ID.1, 2, 3, 5, 6, 7, 8, 9

Science

Table 7 summarizes the science standards included in the study.

Table 7 MS-CCR Science Standards Covered in the Correspondence Study

Kindergarten	Life Science	L.1A,1B, 2, 3A, 3B, 4
	Physical Science	P.5A, 5B
	Earth and Space Science	E.8A, 8B, 10
Grade 1	Life Science	L.1, 2, 3A, 3B, 4
	Physical Science	P.6A, 6B
	Earth and Space Science	E.9A, 9B, 10
Grade 2	Life Science	L.1, 2, 3A, 3B, 4
	Physical Science	P.5, 6

	Earth and Space Science	E.8, 10
Grade 3	Life Science	L.1, 2, 4
	Physical Science	P.5, 6
	Earth and Space Science	E.7A, 7B, 9, 10
Grade 4	Life Science	L.1, 2
	Physical Science	P.6A, 6B, 6C
	Earth and Space Science	E.9A, 9B, 9C, 10
Grade 5	Life Science	L.3A, 3B
	Physical Science	P.5A, 5B, 5C, 6
	Earth and Space Science	E.8A, 8B, 10
Grade 6	Life Science	L.1, 3, 4
	Physical Science	P.6
	Earth and Space Science	E.8
Grade 7	Life Science	L.3
	Physical Science	P.5A, 5B, 5C, 5D, 5E
	Earth and Space Science	E.9A, 9B, 9C
Grade 8	Life Science	L.2A, 2B, 2C, 4A, 4B
	Physical Science	P.6
	Earth and Space Science	E.7, 9A, 9B, 10
Grades 9-12	Biology	BIO.1A, 1B, 1C, 1D, 1E, 2, 3A, 3B, 3C, 4, 5

English Language Proficiency (ELP) Standards

Table 8 lists the MS ELP Standards included in the study. For the MS ELP standards, in Phase 2 of the study panelists assigned a DOK rating to the following MS ELP standards and identified correspondence between the MS ELP standards and MS-CCR content standards.

Table 8 MS ELP Standards Covered in the Correspondence Study

Kindergarten	MS ELP standards 1-10, Levels 1,2,3,4,5
Grade 1	MS ELP standards 1-10, Levels 1,2,3,4,5



Grades 2-3	MS ELP standards 1-10, Levels 1,2,3,4,5
Grades 4-5	MS ELP standards 1-10, Levels 1,2,3,4,5
Grades 6-8	MS ELP standards 1-10, Levels 1,2,3,4,5
Grades 9-12	MS ELP standards 1-10, Levels 1,2,3,4,5

The organization of MS ELP standards in relation to participation in content-area practices is displayed below in Figure 1. MS ELP standards 1 through 7 involve the language necessary for ELs to engage in content-specific practices associated with ELA & literacy, mathematics, and science. Standards 8 through 10 involve micro-level linguistic features that are intended to function in the service of standards 1 through 7.

Figure 1: Organization of the MS ELP Standards 1-10

Table 1. Organization of the ELP Standards in Relation to Participation in Content-Area Practices	
1	construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing
2	participate in grade-appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions
3	speak and write about grade-appropriate complex literary and informational texts and topics
4	construct grade-appropriate oral and written claims and support them with reasoning and evidence
5	conduct research and evaluate and communicate findings to answer questions or solve problems
6	analyze and critique the arguments of others orally and in writing
7	adapt language choices to purpose, task, and audience when speaking and writing
8	determine the meaning of words and phrases in oral presentations and literary and informational text
9	create clear and coherent grade-appropriate speech and text
10	make accurate use of standard English to communicate in grade-appropriate speech and writing

Standards 1 through 7 involve the language necessary for ELs to engage in the central content-specific practices associated with ELA & Literacy, mathematics, and science. They begin with a focus on extraction of meaning and then progress to engagement in these practices.

Standards 8 through 10 home in on some of the more micro-level linguistic features that are undoubtedly important to focus on, but only in the service of the other seven standards.

The proficiency level 1–5 descriptors for each of the 10 MS ELP standards are:

1. preproduction,
2. early production,
3. speech emergence,
4. early/intermediate fluency,
5. advanced fluency.

These levels describe targets for EL performance by the end of each ELP level at a particular point in time and reflect a linear progression across the proficiency levels of an aligned set of knowledge, skills, and abilities. Figure 2 below shows how the proficiency levels are realized in the standards.

Figure 2: Sample Overarching MS ELP Standard with Proficiency Levels

ELP Standard		By the end of each English language proficiency level, an EL can . . .				
		Level 1	Level 2	Level 3	Level 4	Level 5
6-8.1	An EL can . . .	use a very limited set of strategies to:	use an emerging set of strategies to:	use a developing set of strategies to:	use an increasing range of strategies to:	use a wide range of strategies to:
	construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.	<ul style="list-style-type: none"> identify a few key words and phrases in oral communications and simple written texts. 	<ul style="list-style-type: none"> identify the main topic in oral communications and simple written texts retell a few key details. 	<ul style="list-style-type: none"> determine the central idea or theme in simple oral presentations or written text explain how the theme is supported by specific details summarize part of the text. 	<ul style="list-style-type: none"> determine two or more central ideas or themes in oral presentations or written text explain how the central ideas/themes are supported by specific textual details summarize a simple text. 	<ul style="list-style-type: none"> determine central ideas or themes in oral presentations or written text explain how the central ideas/themes are developed by supporting ideas or evidence summarize a text.

Additional detailed information on the MS ELP standards can be found in the [MS ELP standards document](#) and the [MS Alternate ELP standards document](#) (for the MS ALT ELP standards).

Methodology

Standards-to-Standards Alignment Methodology

The correspondence study methodology used was adapted from Dr. Gary Cook’s (2005, 2006, 2007) adaptation of Dr. Norman Webb’s (1997) alignment framework. The study was also modeled after Chi, Garcia, Surber, & Trautman’s (2011) application of the framework in an alignment study between the Common Core State Standards in English language arts and mathematics and the WIDA English language proficiency standards. The current study was adapted from Chi, Garcia, Surber, & Trautman’s (2011) to account for the fact that Mississippi uses ELP standards modeled after the English Language Proficiency Assessment (ELPA21) standards, not the WIDA ELP standards, and are thus structured differently.

The correspondence study was conducted in three phases designed to elicit evidence of the match between standards as well as the depth and breadth of correspondence and was conducted over three days, January 17–19, 2023, at the Hilton Jackson in Jackson, Mississippi. The study was attended by 39 panelists separated into eight groups. Also attending the study were six staff members from the MDE and five R7CC project team members, four of the R7CC partners were from the Center for Applied Linguistics who led the training and data collection process.

Pre-Meeting Work

Panelists were required to attend a virtual meeting which was held Monday, December 12, 2022, from 3:00 - 4:30 pm. In this meeting, panelists were introduced to the project leads from the MDE, the R7CC, and the CAL. The meeting consisted of two parts. In the first part, the entire group met, and the second part of the meeting was for the identified table leaders. In the first part, panelists were provided with information on the purpose of the study, an overview of the study design and logistics, a brief introduction of DOK categorization, as well as next steps for the project. The second part of the meeting assisted table leaders with understanding their roles and responsibilities. After this meeting, panelists were asked to review the MS ELP and the MS-CCR standards



in ELA, mathematics, or science for the specific grade cluster in which they are assigned. This meeting was recorded for those who were unable to attend the live meeting or those who wished to review the information.

In addition to this meeting, panelists were invited to attend an optional one-hour training session on the MS ELP standards on January 11, 2023, held by MDE to review the MS ELP standards. MDE staff reviewed the structure and approach of the MS ELP standards and panelists had an opportunity to ask questions. This optional training allowed panelists who were less familiar with the MS ELP standards to be prepared for the correspondence study. The training provided opportunities for panelists to engage in the standards through group collaboration and was recorded for those who were unable to attend the live session or to review the training information.

Phase 1

The purpose of Phase 1 was to determine group consensus DOK ratings for content standards. During the training on Day 1, in preparation for Phase 1, panelists were provided with information about theoretical underpinnings of DOK (Webb, 1997; 2000; 2002), and a definition from Francis (2017) to use as an anchor for their DOK ratings:

Essentially, the depth of knowledge designates how deeply students must know, understand, and be aware of what they are learning in order to attain and explain answers, outcomes, results, and solutions. It also designates how extensively students are expected to transfer and use what they have learned in different academic and real-world contexts.

Panelists also received detailed definitions of the four levels of DOK and examples for their specific content area. After reviewing definitions and examples and discussing as a group, panelists were then asked to apply a DOK rating to a practice standard. Then, as a group, they discussed their DOK ratings and came to a consensus on what DOK they would assign to the standard.

Materials

For Phase 1, panelists were provided with the following materials (see Appendix C):

- Phase 1 Independent Judgment Sheet (link was provided in an email)
- MS Content Standards for ELA, Mathematics, Science (printed for in-person study, mailed link for second virtual K-5 math study)
- DOK Definitions & Content Area Guidance (printed for in-person study, emailed link for second virtual K-5 math study)
- Phase 1 Group Consensus Sheet (link was provided in an email)
- Phase 1 Group Consensus Log (printed for in-person study, emailed link for second virtual K-5 math study)



The Phase 1 Independent Judgement Sheet and Phase 1 Group Consensus Sheet were both Google sheets. The Consensus Sheet was set up to populate with the entries from each panelist's Independent Judgement Sheet so that after assigning independent DOKs for a grade level, group members could all look at the Consensus Sheet and see everyone's independent DOK judgements. The Phase 1 Group Consensus Log was provided to keep a written record of the group's consensus scores, in case of any error in the Google sheet or if anyone were to unintentionally erase or change data in the consensus sheet.

Judgement Procedures

After the training was completed, panelists began Phase 1 at the end of Day 1. To begin the procedures for Phase 1, panelists were instructed to:

1. read the content standards for one grade,
2. consider the instructional context for the grade level and content area (i.e., what they know about how the standard is realized in the classroom),
3. assign a DOK based on the level of thinking students are expected to demonstrate or communicate to meet this standard, and
4. enter their scores into the Phase 1 Independent Judgement Sheet.

The training included guided practice with this process. The panelists were instructed to assign a DOK from 1 to 4 for each standard with the guidance below provided for the four DOK levels:

- DOK-1: Recall and reproduce data, definitions, details, facts, information, and procedures (knowledge acquisition).
- DOK-2: Use academic concepts and cognitive skills to answer questions, address problems, accomplish tasks, and analyze texts and topics (knowledge application).
- DOK-3: Think strategically and reasonably about how and why concepts, ideas, operations, and procedures can be used to attain and explain answers, conclusions, decisions, outcomes, reasons, and results (knowledge analysis).
- DOK-4: Think extensively about what else can be done, how else learning can be used, and how could the student personally use what they have learned in different academic and real-world contexts (knowledge augmentation).

Panelists were instructed to focus on the level of thinking students are expected to demonstrate as part of the learning experience, and not the type of thinking or knowledge (which is what Bloom's Taxonomy captures). They were provided with guiding questions to ask themselves as they read a standard: are students acquiring knowledge? (DOK-1), are students applying knowledge? (DOK-2), are students analyzing knowledge? (DOK-3), or are students augmenting knowledge? (DOK-4). The panelists were also encouraged to refer to the DOK Definitions & Content Area Guidance provided for them.



Once all members of a group had completed their judgements, the group was instructed to view all judgements on the Phase 1 Group Consensus Sheet, discuss each standard one by one, and decide on a consensus judgement for each standard.

To facilitate discussion, different roles and responsibilities were assigned to panelists. Each group had one table leader. During the consensus discussion, the table leaders were instructed to lead the group in discussion, working standard by standard. They were also tasked with recording the consensus decision in the Phase 1 Group Consensus Sheet. One panelist was designated as the table scribe. The scribe was asked to write down the consensus decision in the paper Group Consensus Log. They were also instructed to read each judgement aloud to confirm with the group and check against the spreadsheet entry. All panelists were instructed to share their rationale for their selections; if an agreement or consensus is easily reached, they could move on to the next standard. Guidance was provided for discussing their judgement, as well as for resolving different interpretations, with panelists being instructed to appeal to a reviewer with experience in teaching that grade level. They were also instructed to point to the most likely skills or content knowledge required in the objective, not the more extreme possibilities. Panelists completed Phase 1 of the study on Day 2, January 18, 2023.

Phase 2

On Day 3, January 19, 2023, panelists were trained on and completed Phase 2. To begin the training, panelists were provided with an overview of the structure and content of the MS ELP standards and read through the ten overarching MS ELP standards and circled keywords. The MS ELP standards are divided into the following groupings for grade levels: Kindergarten; Grade 1; Grades 2-3; Grades 4-5; Grades 6-8; Grades 9-12. As mentioned above in the standards section:

- MS ELP Standards 1 through 7 involve the language necessary for ELs to engage in content-specific practices associated with ELA & literacy, mathematics, and science
- Standards 8 through 10 involve micro-level linguistic features that are intended to function in the service of standards 1 through 7.

There was also a discussion of the ten standards and how they correspond to the modalities (receptive, productive, interactive) and domains (listening, speaking, reading, and writing). Additionally, panelists were provided with an overview of the proficiency levels (1 preproduction – 5 advanced fluency) and how they are realized in the standards. All judgements during Phase 2 were completed independently, although panelists were sitting at the table with their group from Phase 1.

After the MS ELP training, mathematics panelists were sent to their breakout room to complete the remainder of their training separately. The math groups were provided with additional resources due to the challenging nature of corresponding the MS ELP standards directly to the math standards. Instead of relying solely on the math standards, the math panelists used the Standards for Mathematical Practices (SMPs) as a bridge between



content and MS ELP standards. Further discussion of the SMPs and Phase 2 for math can be found below the procedures for ELA and science. The remainder of this section will be divided into ELA/science and mathematics.

ELA/Science Materials

For Phase 2, ELA and science panelists were provided with the following materials:

- Phase 2 Instructions (printed)
- Phase 2 Correspondence Google Sheet (linked in email)
- DOK Definitions (printed)
- MS Content Standards for ELA and Science (printed)
- MS ELP Standards (printed)
- Evaluations (electronic --> linked in Google Sheet)

The link provided for the Phase 2 Evaluations was linked to a survey built in Microsoft Forms.

ELA and Science Judgement Procedures

To begin the procedures for Phase 2, panelists were instructed to:

1. Read the MS ELP standards for one grade or grade band, including the main overarching MS ELP standard as well as the standard realized for all five ELP proficiency levels. For example: they would read MS ELP standard 1 and the standard realized for all five ELP proficiency levels for grade 4.

Figure 3: MS ELP Standard 1 with Realized Proficiency Level Descriptors

ELP Standard		By the end of each English language proficiency level, an EL can . . .				
		Level 1	Level 2	Level 3	Level 4	Level 5
4-5.1	An EL can . . .	use a very limited set of strategies to:	use an emerging set of strategies to:	use a developing set of strategies to:	use an increasing range of strategies to:	use a wide range of strategies to:
	construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading, and viewing.	<ul style="list-style-type: none"> • identify a few key words and phrases <p>from read-alouds, simple written texts, and oral presentations.</p>	<ul style="list-style-type: none"> • identify the main topic • retell a few key details <p>from read-alouds, simple written texts, and oral presentations.</p>	<ul style="list-style-type: none"> • determine the main idea or theme, and • retell a few key details • retell familiar stories <p>from read-alouds, simple written texts, and oral presentations.</p>	<ul style="list-style-type: none"> • determine the main idea or theme, and • explain how some key details support the main idea or theme • summarize part of a text <p>from read-alouds, written texts, and oral presentations.</p>	<ul style="list-style-type: none"> • determine two or more main ideas or themes • explain how key details support the main ideas or themes • summarize a text <p>from read-alouds, written texts, and oral presentations.</p>

2. Panelists were then instructed to rely on the DOK definitions to make a judgment about how students will demonstrate the MS ELP standard. When working with a grade band (for example, MS ELP standards for Grades 2-3), the panelists only needed to note their judgements one time, as the judgements applied to all grade levels in the standards grade band. They were told they could assign

the same DOK to all proficiency levels (1-5) within an MS ELP standard or they could progress in DOK levels within the standard.

3. Next, working by grade level, panelists were instructed to correspond up to three content standards to each MS ELP standard. To make correspondence decisions, they were instructed to consider which content standards are most linked to the MS ELP standard (i.e., Which content standards does the MS ELP standard support?). They were provided with guidance that if more than three standards are linked, they should select the content standards that are, in their judgment, most important for the grade level and content area.

Panelists were allowed to link a content standard to as many MS ELP standards as they deemed appropriate. Within an MS ELP standard, they could choose to link the same content standards for each proficiency level (1-5) or they could choose to link different content standards. Panelists were also instructed that they could choose not to link any content standards to an MS ELP standard. In the Phase 2 Correspondence Google Sheet there was an option to select “No” to “Are any Grade X content standards linked?”, leave the content cells blank, and enter a comment about why they did not believe any content standards are linked. For MS ELP standards where they had chosen linked content standards, they did not need to provide comments.

Panelists were also given guidance that Standards 8-10 include language features and may align with many content standards. Panelists completed all of Phase 2 during Day 3.

Mathematics Materials

For Phase 2, math panelists were provided with the following materials:

- Phase 2 Instructions (printed)
- Phase 2 Correspondence Google Sheet (link in email)
- DOK Definitions (printed)
- MS Content Standards for Mathematics (printed)
- Math Practices and Content Standards by Grade Level (printed)
- MS ELP Standards (printed)
- Evaluations (electronic --> linked in Google Sheet)
- Math Practices Resources (printed)

The link provided for the Phase 2 Evaluations linked to a survey built in Microsoft Forms.

Mathematics Judgement Procedures

To facilitate the correspondence of MS ELP standards to the MS-CCR math standards, the math groups (K-5 and 6-12) were provided with additional resources and training prior to making their Phase 2



judgements. The judgment process was also slightly modified from the process used for ELA and science.

Because mathematics content standards do not typically contain explicit information about language demands, we chose to use the Standards for Mathematical Practices (SMPs) as a bridge between the mathematics content and MS ELP standards. The SMPs are published by the MDE as part of the standards. The SMPs are a list of eight practices that describe how the student should be modeling their thinking to meet the standard, whereas the standards focus only on the mathematical concept or skill. These practices specify the language demands of the content standards. The same eight SMPs are used across all grade levels.

The eight SMPs are:

1. Make sense of problems and persevere in solving them,
2. Reason abstractly and quantitatively,
3. Construct viable arguments and critique the reasoning of others,
4. Model with mathematics,
5. Use appropriate tools strategically,
6. Attend to precision,
7. Look for and make use of structure, and
8. Look for and express regularity in repeated reasoning.

To provide further support for the mathematics group, we compiled information about which practices are used to support the content standards. The Mississippi Instructional Planning Guides for Mathematics K-12 (Mississippi Department of Education, 2021), which provide curriculum guidance, link the content standards to specific practices. Below is an example of a Grade 6 mathematics standard and its corresponding SMPs:

Standard:

6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*

SMPs:

- a. SMP 2 Reason abstractly and quantitatively.
- b. SMP 6 Attend to precision.

Through additional training, the mathematics groups used the SMPs to understand the language demands of the MS-CCR mathematics standards and then could link these to the MS ELP standards.



To begin the judgement process, mathematics panelists were instructed to work within a grade level or band to assign DOKs to all the MS ELP standards within the grade band. If the MS ELP standards cover multiple grade levels, panelists were instructed to only make the judgements once for each band (e.g., the Grades 6-12 mathematics group assigned DOKs to the grades 6-8 MS ELPs and the grades 9-12 MS ELPs). They were instructed to rely on the DOK definitions to make a judgment about how students will demonstrate the MS ELP standard.

Next, panelists chose one SMP for each MS ELP standard. These judgments were individual for each panelist but were discussed as a group. They were allowed to select the same practice for each level within a standard or a different practice. They were also allowed to assign the same practice across different standards (e.g., MS ELP Standard 1 and MS ELP Standard 8). In this respect, the Phase 2 process for the mathematics group differed from the ELA and science groups because they first selected an SMP before selecting a corresponding content standard for an ELP.

After that, to make correspondence judgements, panelists were instructed to correspond up to three content standards to each MS ELP standard working by grade level. They were instructed to review the list of content standards related to the SMP they selected. From this list, they could consider which content standards are most linked to the MS ELP standard (i.e., which content standards does the MS ELP standard support). If more than 3 standards were linked, they were instructed to select the content standards that are, in their judgment, most important for the grade level and content area. Panelists were allowed to link a content standard to as many MS ELP standards as they deemed appropriate. Within an MS ELP standard, they could choose to link the same content standards for each proficiency level, or they could choose to link different content standards. Panelists were also instructed that they could choose not to link any content standards to an MS ELP standard. In the Phase 2 Correspondence Google Sheet there was an option to select “No” to “Are any Grade X content standards linked?”, leave the content cells blank, and enter a comment about why they did not believe any content standards are linked. For MS ELP standards where they had chosen corresponding content standards, they did not need to provide comments.

Panelists were also given guidance that MS ELP standards 8-10 include language features and may align with many content standards. Panelists completed all of Phase 2 during Day 3, although significant issues emerged with the K-5 math group. Further discussion of these issues and solutions is described in the next section.

K-5 Mathematics

During Day 3, several issues emerged in the K-5 math group. Panelists encountered challenges with the standards and their task, misunderstandings of the MS ELP standards, room quality and technology issues. There were also some irregularities that emerged in data entry.



After the study and a discussion of these issues, project staff completed an analysis of inter-rater reliability (IRR) for the math groups. The analysis revealed unexpected Inter-Rater Reliability (IRR) patterns in the K-5 group's DOK ratings.

K-5 Mathematics Second Study

As a result of the irregularities with the K-5 group during the January 17-19 in-person meeting, project staff determined that it was necessary to conduct the correspondence process again for these grade levels.

The methodology of the second study was the same as the initial study, with two changes. First, for practical reasons, the study was conducted virtually over Zoom through a series of meetings over multiple weeks, rather than an in-person study completed in two-and-a-half days. Second, the K-5 group was split up into two smaller groups of K-2 and 3-5. This division was made to make the workload more feasible for panelists and was based on group feedback that covering six total grade levels was too demanding for one group.

The K-2 group included five panelists and the 3-5 group included six panelists.

The online data collection activity was collected over three different meeting dates all held via Zoom. As with the in-person meeting, all sessions were facilitated by CAL project staff and attended and supported by staff members from CAL, R7CC, and MDE. All materials were provided digitally and were the same materials as the printed materials used in person.

During the meetings, panelists were trained on DOK then independently completed DOK judgments for the content standards as per the study procedure. This work was done asynchronously. Then, during the Group Consensus Meeting, panelists discussed and came to consensus about their DOK ratings. During this meeting, a CAL staff member entered data for group consensus DOK judgments of the content standards rather than assigning a table leader to do this. This data entry procedure was more practical in the online meeting format. Because neither group completed their group consensus discussions during the March 30th meeting, we spent the first half-hour of the April 4th meeting completing this work before the Phase 2 training began.

After the Phase 2 training, panelists completed the correspondence judgments independently. They could ask questions or email the project team for support during the period of independent work. Although the independent work was completed asynchronously, the process and method were the same as that of the in-person meeting. The results of the K-2 and 3-5 math groups are integrated with the data from the in-person data collection activity.



Findings

For the following Statistics and Findings tables, the first column lists the MS-CCR standards in each respective area. The second set of columns provide Alignment Statistics, and the third set of columns provide Alignment Findings. Based upon the criteria set as reviewed in the section above, to meet the Linked criteria, at least one MS ELP standard should be identified for each MS-CCR standard. To meet the correspondence criterion, the DOK level should be equal to or greater than 40% for each reporting category and should be moderate or strong coverage across reporting categories. If the linking and correspondence meet the acceptable threshold, this would indicate adequate alignment.

English Language Arts Statistics and Findings

Reading Summary

Table 9 presents the findings from the correspondence between the MS-CCR Reading standards and the MS ELP standards for grades K-12. The reading standards in the first column include reading literature, reading informational text, and reading foundational skills.

The linked criteria for reading showed strong correspondence for most standards and most grades with the following exceptions: there was limited linkage found for the foundational reading skills in grades 2-5. Additionally, there was limited linkage found for reading literature in grade 1.

The depth of knowledge (DOK) criteria was met for all grades with the exception of foundational reading in grades 2-5 where it was not applicable. This is consistent with expectations for this area of the MS ELP standards because the skills are foundational pre-requisites to reading skills (e.g., understanding that words are followed left to right, top to bottom, and page to page) and it would not be expected for these to directly correspond with English language proficiency standards.

Kindergarten showed limited coverage for foundational reading skills, first and second grades showed limited coverage for reading literature and reading foundational skills, grades 3-5 also showed limited coverage for foundational reading skills. Foundational reading skills are not included in the MS-CCR standards for Reading in grades 6-12. Strong coverage was noted in reading literature in grades K, and 3-12, Strong coverage was also noted in reading informational text in all grades. Reading foundations are micro linguistic skills and are not necessarily covered in a proficiency framework. This finding is consistent with other reports of this type (Chi, Y., Garcia, R.B., Surber, C., & Trautman, L. 2011). Strong links between these areas of our standards were not expected because these skills are very different than English language proficiency standards. Overall, the correspondence between the MS ELA standards and the MS ELP standards is strong across different areas and across the different grade clusters.



Table 9: Reading Statistics and Findings

Reading Standards	(Standards-to-Standards) Alignment Criteria					
	Alignment Statistics			Alignment Findings		
	Linked	Correspondence		Linked	Correspondence	
		DOK	Coverage		DOK	Coverage
Grade K (with 6 panelists)		100%			(40%)	
RL: Reading Literature	4	100%	3 of 4	Yes	Yes	Strong
RI: Reading Informational Text	5	100%	4 of 4	Yes	Yes	Strong
RF: Reading Foundational Skills	1	100%	1 of 4	Yes	Yes	Limited
Grade 1 (with 6 panelists)		100%			(40%)	
RL: Reading Literature	2	100%	1 of 4	Yes	Yes	Limited
RI: Reading Informational Text	4	100%	3 of 4	Yes	Yes	Strong
RF: Reading Foundational Skills	1	100%	1 of 3	Yes	Yes	Limited
Grade 2 (with 6 panelists)		58%			(40%)	
RL: Reading Literature	2	100%	1 of 4	Yes	Yes	Limited
RI: Reading Informational Text	4	75%	3 of 4	Yes	Yes	Strong
RF: Reading Foundational Skills	0	N/A	0 of 2	No	N/A	Limited
Grade 3 (with 6 panelists)		67%			(40%)	
RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	3	100%	2 of 3	Yes	Yes	Strong
RF: Reading Foundational Skills	0	N/A	0 of 2	No	N/A	Limited
Grade 4 (with 6 panelists)		67%			(40%)	
RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	2	100%	2 of 4	Yes	Yes	Strong
RF: Reading Foundational Skills	0	N/A	0 of 2	No	N/A	Limited
Grade 5 (with 6 panelists)		58%			(40%)	

RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	4	75%	3 of 3	Yes	Yes	Strong
RF: Reading Foundational Skills	0	N/A	0 of 2	No	N/A	Limited
Grade 6 (with 5 panelists)		75%			(40%)	
RL: Reading Literature	4	50%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	4	100%	2 of 4	Yes	Yes	Strong
Grade 7 (with 5 panelists)		68%			(40%)	
RL: Reading Literature	4	75%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	5	60%	3 of 4	Yes	Yes	Strong
Grade 8 (with 5 panelists)		55%			(40%)	
RL: Reading Literature	4	50%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	5	60%	3 of 4	Yes	Yes	Strong
English I (with 3 panelists)		92%			(40%)	
RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	6	83%	3 of 4	Yes	Yes	Strong
English II (with 3 panelists)		92%			(40%)	
RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	6	83%	3 of 4	Yes	Yes	Strong
English III (with 3 panelists)		83%			(40%)	
RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	6	67%	3 of 4	Yes	Yes	Strong
English IV (with 3 panelists)		83%			(40%)	
RL: Reading Literature	2	100%	2 of 4	Yes	Yes	Strong
RI: Reading Informational Text	6	67%	3 of 4	Yes	Yes	Strong

Writing Summary

Table 10 presents the findings from the correspondence between the MS-CCR writing standards and the MS ELP standards. The writing standards include text types and purposes, production and distribution of writing, research to build and present knowledge, and range of writing.

The linking criterion for writing was met across all grade levels. The DOK threshold was met in all grades except for grades 1 and 8. Strong coverage was indicated across all grade levels in writing.

Table 10: Writing Statistics and Findings

Writing Standards	(Standards-to-Standards) Alignment Criteria					
	Alignment Statistics			Alignment Findings		
	Linked	Correspondence		Linked	Correspondence	
		DOK	Coverage		DOK	Coverage
Grade K (with 6 panelists)		75%			(40%)	
W: Writing	4	75%	2 of 3	Yes	Yes	Strong
Grade 1 (with 6 panelists)		25%			(40%)	
W: Writing	4	25%	3 of 3	Yes	No	Strong
Grade 2 (with 6 panelists)		40%			(40%)	
W: Writing	5	40%	2 of 3	Yes	Yes	Strong
Grade 3 (with 6 panelists)		57%			(40%)	
W: Writing	7	57%	4 of 4	Yes	Yes	Strong
Grade 4 (with 6 panelists)		40%			(40%)	
W: Writing	5	40%	3 of 4	Yes	Yes	Strong
Grade 5 (with 6 panelists)		50%			(40%)	
W: Writing	8	50%	4 of 4	Yes	Yes	Strong
Grade 6 (with 5 panelists)		50%			(40%)	
Writing	4	50%	3 of 4	Yes	Yes	Strong
Grade 7 (with 5 panelists)		33%			(40%)	



Writing	6	33%	3 of 4	Yes	No	Strong
Grade 8 (with 5 panelists)		80%			(40%)	
Writing	5	80%	3 of 4	Yes	Yes	Strong
English I (with 3 panelists)		50%			(40%)	
Writing	6	50%	3 of 4	Yes	Yes	Strong
English II (with 3 panelists)		50%			(40%)	
Writing	6	50%	3 of 4	Yes	Yes	Strong
English III (with 3 panelists)		50%			(40%)	
Writing	6	50%	3 of 4	Yes	Yes	Strong
English IV (with 3 panelists)		50%			(40%)	
Writing	6	50%	3 of 4	Yes	Yes	Strong

Speaking/Listening Summary

Table 11 provides the findings from the correspondence between the MS-CCR speaking and listening standards and the MS ELP standards. The speaking and listening standards include comprehension and collaboration and presentation of knowledge and ideas.

The linkage criteria for speaking and listening were met across all grade levels. The DOK threshold was met in all areas with the exception of English I, II, III, and IV. Coverage was strong across all grade levels.

Table 11: Speaking and Listening Statistics and Findings

Speaking & Listening Standards	(Standards-to-Standards) Alignment Criteria					
	Alignment Statistics			Alignment Findings		
	Linked	Correspondence		Linked	Correspondence	
		DOK	Coverage		DOK	Coverage
Grade K (with 6 panelists)		100%			(40%)	
S: Speaking & Listening	5	100%	2 of 2	Yes	Yes	Strong
Grade 1 (with 6 panelists)		100%			(40%)	
S: Speaking & Listening	5	100%	2 of 2	Yes	Yes	Strong



Grade 2 (with 6 panelists)		60%			(40%)		
S: Speaking & Listening	5	60%	2 of 2	Yes	Yes	Strong	
Grade 3 (with 6 panelists)		60%			(40%)		
S: Speaking & Listening	5	60%	2 of 2	Yes	Yes	Strong	
Grade 4 (with 6 panelists)		50%			(40%)		
S: Speaking & Listening	4	50%	2 of 2	Yes	Yes	Strong	
Grade 5 (with 6 panelists)		50%			(40%)		
S: Speaking & Listening	4	50%	2 of 2	Yes	Yes	Strong	
Grade 6 (with 5 panelists)		80%			(40%)		
Speaking & Listening	5	80%	2 of 2	Yes	Yes	Strong	
Grade 7 (with 5 panelists)		50%			(40%)		
Speaking & Listening	6	50%	2 of 2	Yes	Yes	Strong	
Grade 8 (with 5 panelists)		100%			(40%)		
Speaking & Listening	5	100%	2 of 2	Yes	Yes	Strong	
English I (with 3 panelists)		33%			(40%)		
Speaking & Listening	3	33%	2 of 2	Yes	No	Strong	
English II (with 3 panelists)		33%			(40%)		
Speaking & Listening	3	33%	2 of 2	Yes	No	Strong	
English III (with 3 panelists)		33%			(40%)		
Speaking & Listening	3	33%	2 of 2	Yes	No	Strong	
English IV (with 3 panelists)		33%			(40%)		
Speaking & Listening	3	33%	2 of 2	Yes	No	Strong	

Language Summary

Table 12 provides the findings from the correspondence between the MS-CCR language standards and the MS ELP standards. The language standards include conventions of standard English, knowledge of language, and vocabulary acquisition and use.

The linkage criterion for language was met across all grade levels. DOK was met at or greater than the 40% threshold across all grades and coverage was strong across all grade levels.

Table 12: Language Statistics and Findings						
Language Standards	(Standards-to-Standards) Alignment Criteria					
	Alignment Statistics			Alignment Findings		
	Linked	Correspondence		Linked	Correspondence	
		DOK	Coverage		DOK	Coverage
Grade K (with 6 panelists)		80%			(40%)	
L: Language	5	80%	2 of 2	Yes	Yes	Strong
Grade 1 (with 6 panelists)		100%			(40%)	
L: Language	4	100%	2 of 2	Yes	Yes	Strong
Grade 2 (with 6 panelists)		100%			(40%)	
L: Language	4	100%	3 of 3	Yes	Yes	Strong
Grade 3 (with 6 panelists)		80%			(40%)	
L: Language	5	80%	3 of 3	Yes	Yes	Strong
Grade 4 (with 6 panelists)		80%			(40%)	
L: Language	5	80%	3 of 3	Yes	Yes	Strong
Grade 5 (with 6 panelists)		75%			(40%)	
L: Language	4	75%	3 of 3	Yes	Yes	Strong
Grade 6 (with 5 panelists)		100%			(40%)	
Language	5	100%	3 of 3	Yes	Yes	Strong
Grade 7 (with 5 panelists)		100%			(40%)	
Language	4	100%	3 of 3	Yes	Yes	Strong



Grade 8 (with 5 panelists)		100%			(40%)	
Language	5	100%	3 of 3	Yes	Yes	Strong
English I (with 3 panelists)		100%			(40%)	
Language	4	100%	2 of 3	Yes	Yes	Strong
English II (with 3 panelists)		100%			(40%)	
Language	4	100%	2 of 3	Yes	Yes	Strong
English III (with 3 panelists)		100%			(40%)	
Language	4	100%	2 of 3	Yes	Yes	Strong
English IV (with 3 panelists)		100%			(40%)	
Language	4	100%	2 of 3	Yes	Yes	Strong

Mathematics Statistics and Findings

Table 13 provides the findings from the correspondence between the MS-CCR mathematics standards and the MS ELP standards.

- The MS-CCR mathematics standards in kindergarten through grade 5 include: counting and cardinality, operations and algebraic thinking, number and operations in base ten, number and operations in fractions, measurement and data, and geometry.
- The MS-CCR mathematics standards in grades 6 and 7 include: ratios and proportional relationships, the number system, expressions and equations, geometry, and statistics and probability.
- Grade 8 MS-CCR mathematics standards include: the number system, expressions and equations, functions, geometry, and statistics and probability.
- Algebra I (grades 9-12) MS-CCR standards include: number and quantity, algebra, functions, and statistics and probability. The first column lists the standards by grade level and subject.

The second set of columns provide the Alignment Statistics for the number of standards linked as well as the correspondence of the DOK and the standards coverage. The third set of columns provide the Alignment Findings of the linked standards and the correspondence of the DOK and standards coverage.

Table 13: Mathematics Statistics and Findings

Mathematics Standards	(Standards-to-Standards) Alignment Criteria					
	Alignment Statistics			Alignment Findings		
	Linked	Correspondence		Linked	Correspondence	
		DOK	Coverage		DOK	Coverage
Grade K (with 4 panelists)		100%			(40%)	
CC: Counting and Cardinality	7	100%	3 of 3	Yes	Yes	Strong
OA: Operations and Algebraic Thinking	5	100%	1 of 1	Yes	Yes	Strong
NBT: Number and Operations in Base Ten	1	100%	1 of 1	Yes	Yes	Strong
MD: Measurement and Data	3	100%	2 of 2	Yes	Yes	Strong
G: Geometry	5	100%	2 of 2	Yes	Yes	Strong
Grade 1 (with 4 panelists)		91%			(40%)	
OA: Operations and Algebraic Thinking	7	100%	4 of 4	Yes	Yes	Strong
NBT: Number and Operations in Base Ten	6	83%	3 of 3	Yes	Yes	Strong
MD: Measurement and Data	5	80%	4 of 4	Yes	Yes	Strong
G: Geometry	2	100%	1 of 1	Yes	Yes	Strong
Grade 2 (with 4 panelists)		70%			(40%)	
OA: Operations and Algebraic Thinking	4	100%	3 of 3	Yes	Yes	Strong
NBT: Number and Operations in Base Ten	9	100%	2 of 2	Yes	Yes	Strong
MD: Measurement and Data	10	50%	4 of 4	Yes	Yes	Strong
G: Geometry	3	100%	1 of 1	Yes	Yes	Strong
Grade 3 (with 6 panelists)		40%			(40%)	
OA: Operations and Algebraic Thinking	6	67%	2 of 4	Yes	Yes	Strong
NBT: Number and Operations in Base Ten	0	N/A	0 of 1	No	N/A	Limited
NF: Number and Operations - Fractions	1	0%	1 of 1	Yes	No	Strong
MD: Measurement and Data	3	33%	2 of 4	Yes	No	Strong
G: Geometry	2	100%	1 of 1	Yes	Yes	Strong
Grade 4 (with 6 panelists)		70%			(40%)	
OA: Operations and Algebraic Thinking	3	67%	3 of 3	Yes	Yes	Strong

NBT: Number and Operations in Base Ten	4	100%	2 of 2	Yes	Yes	Strong
NF: Number and Operations - Fractions	3	33%	3 of 3	Yes	No	Strong
MD: Measurement and Data	5	100%	3 of 3	Yes	Yes	Strong
G: Geometry	2	50%	1 of 1	Yes	Yes	Strong
Grade 5 (with 6 panelists)		66%			(40%)	
OA: Operations and Algebraic Thinking	2	100%	2 of 2	Yes	Yes	Strong
NBT: Number and Operations in Base Ten	5	60%	2 of 2	Yes	Yes	Strong
NF: Number and Operations - Fractions	3	33%	2 of 2	Yes	No	Strong
MD: Measurement and Data	2	100%	2 of 3	Yes	Yes	Strong
G: Geometry	1	100%	1 of 2	Yes	Yes	Strong

Grade 6 (with 5 panelists)		67%			(40%)	
RP: Ratios and Proportional Relationships	3	67%	1 of 1	Yes	Yes	Strong
NS: The Number System	3	67%	2 of 3	Yes	Yes	Strong
EE: Expressions and Equations	4	75%	2 of 3	Yes	Yes	Strong
G: Geometry	2	50%	1 of 1	Yes	Yes	Strong
SP: Statistics and Probability	4	75%	2 of 2	Yes	Yes	Strong
Grade 7 (with 5 panelists)		85%			(40%)	
RP: Ratios and Proportional Relationships	2	100%	1 of 1	Yes	Yes	Strong
NS: The Number System	2	100%	1 of 1	Yes	Yes	Strong
EE: Expressions and Equations	3	67%	2 of 2	Yes	Yes	Strong
G: Geometry	4	100%	2 of 2	Yes	Yes	Strong
SP: Statistics and Probability	5	60%	3 of 3	Yes	Yes	Strong
Grade 8 (with 5 panelists)		73%			(40%)	
NS: The Number System	1	100%	1 of 1	Yes	Yes	Strong
EE: Expressions and Equations	5	80%	3 of 3	Yes	Yes	Strong
F: Functions	3	100%	2 of 2	Yes	Yes	Strong
G: Geometry	7	86%	3 of 3	Yes	Yes	Strong
SP: Statistics and Probability	0	N/A	0 of 1	No	N/A	Limited
Algebra I (Grades 9-12) (with 5 panelists)		47%			(40%)	
N: Number and Quantity	1	100%	1 of 2	Yes	Yes	Strong
A: Algebra	8	88%	3 of 4	Yes	Yes	Strong
F: Functions	1	0%	1 of 3	Yes	No	Limited
S: Statistics and Probability	1	0%	1 of 1	Yes	No	Strong



Science Statistics and Findings

Table 14 provides results of the alignment criteria for the MS-CCR science standards and the MS ELP standards. The first column lists the standards by grade level for kindergarten through grade 12. The second set of columns provide the Alignment Statistics for the linked standards, the DOK, and coverage by grade, standard and subject. The third set of columns provide the Alignment Findings of the linked standards, and correspondence for the DOK and coverage by grade level, and standard. The MS-CCR science standards for grades K-8 include life science, physical science, and Earth and space science. The MS-CCR Biology (9-12) standards include cells as a system, energy transfer, reproduction and heredity, adaptations and evolution, and interdependence of organisms and their environments.

The Alignment Findings indicate that all standards across all grade levels were linked. The DOK criterion was met for most standards across all grade levels except for life science in grade 2, physical science in grades K, 1, 2, and 3, Earth and space science in grade 5 and energy transfer in Biology (9-12). Strong coverage was indicated in all standards for grades K, 1, 2, 3, 6, 7, 8, and Biology (9-12). In grades 4 and 5 strong coverage was indicated in life science and physical science and was limited in Earth and space science.

Table 14: Science Statistics and Findings						
Science Standards	(Standards-to-Standards) Alignment Criteria					
	Alignment Statistics			Alignment Findings		
	Linked	Correspondence		Linked	Correspondence	
		DOK	Coverage		DOK	Coverage
Grade K (with 5 panelists)		75%			(40%)	
L: Life Science	10	100%	6 of 6	Yes	Yes	Strong
P: Physical Science	4	25%	2 of 2	Yes	No	Strong
E: Earth and Space Science	2	100%	2 of 3	Yes	Yes	Strong
Grade 1 (with 5 panelists)		56%			(40%)	
L: Life Science	6	67%	4 of 5	Yes	Yes	Strong
P: Physical Science	2	0%	2 of 2	Yes	No	Strong
E: Earth and Space Science	3	100%	2 of 3	Yes	Yes	Strong
Grade 2 (with 5 panelists)		51%			(40%)	
L: Life Science	5	20%	4 of 5	Yes	No	Strong
P: Physical Science	3	33%	2 of 2	Yes	No	Strong
E: Earth and Space Science	1	100%	1 of 2	Yes	Yes	Strong
Grade 3 (with 5 panelists)		53%			(40%)	
L: Life Science	6	83%	3 of 3	Yes	Yes	Strong
P: Physical Science	4	25%	2 of 2	Yes	No	Strong
E: Earth and Space Science	2	50%	2 of 4	Yes	Yes	Strong
Grade 4 (with 5 panelists)		75%			(40%)	
L: Life Science	3	100%	1 of 2	Yes	Yes	Strong
P: Physical Science	4	75%	3 of 3	Yes	Yes	Strong



E: Earth and Space Science	2	50%	1 of 4	Yes	Yes	Limited
Grade 5 (with 5 panelists)		47%			(40%)	
L: Life Science	3	67%	2 of 2	Yes	Yes	Strong
P: Physical Science	4	75%	4 of 4	Yes	Yes	Strong
E: Earth and Space Science	1	0%	1 of 3	Yes	No	Limited
Grade 6 (with 4 panelists)		62%			(40%)	
L: Life Science	16	69%	3 of 3	Yes	Yes	Strong
P: Physical Science	6	67%	1 of 1	Yes	Yes	Strong
E: Earth and Space Science	6	50%	1 of 1	Yes	Yes	Strong
Grade 7 (with 4 panelists)		63%			(40%)	
L: Life Science	5	60%	1 of 1	Yes	Yes	Strong
P: Physical Science	19	63%	5 of 5	Yes	Yes	Strong
E: Earth and Space Science	12	67%	3 of 3	Yes	Yes	Strong
Grade 8 (with 4 panelists)		73%			(40%)	
L: Life Science	17	76%	5 of 5	Yes	Yes	Strong
P: Physical Science	4	100%	1 of 1	Yes	Yes	Strong
E: Earth and Space Science	16	44%	4 of 4	Yes	Yes	Strong
Biology (9-12) (with 4 panelists)		73%			(40%)	
BC: Cells as a System	14	86%	5 of 5	Yes	Yes	Strong
BE: Energy Transfer	4	25%	1 of 1	Yes	No	Strong
BR: Reproduction and Heredity	11	73%	3 of 3	Yes	Yes	Strong
BA: Adaptations and Evolution	6	83%	1 of 1	Yes	Yes	Strong
BI: Interdependence of Organisms and Their Environments	6	100%	1 of 1	Yes	Yes	Strong

Evaluation

After completing correspondence judgements for each grade level in Phase 2, panelists were asked to complete an evaluation. The evaluation survey asked panelists to provide feedback on whether the standards support the most important topics they expected in the content standards. Panelists were also asked to consider all the content standards for this grade and evaluate if the MS ELP standards support the most important performance (DOK levels) they expected in the content standards. They were also asked for their opinion on if the MS ELP standards are written at an appropriate level of specificity and directed towards expectations appropriate for the grade level. Finally, they were asked for their general opinion of the correspondence between the content standards and MS ELP standards. The evaluation was administered via Microsoft Forms and captured panelists' names along with their feedback (it was not anonymous).