Crosswalk Analysis of Deeper Learning Skills to Common Core State Standards

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Educational Policy Improvement Center (EPIC)

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Executive Summary

The Educational Policy Improvement Center (EPIC) conducted a crosswalk between the Deeper Learning Skills (DLS) and the Common Core State Standards (CCSS). The purpose of the crosswalk was to understand the ways in which strategies for deeper learning relate to the CCSS. This comparison was not solely or simply an alignment study, although some elements of content alignment methodology were employed in the first round of reviews. Alignment studies are used to determine matches between sets of standards or between a set of standards and one or more assessments. Because the DLS are not a set of content standards, nor are they an assessment, it is not appropriate to use alignment methodology exclusively when exploring relationships between the DLS and content standard systems such as the CCSS.

A crosswalk, as used in this study, is a means to examine relationships by arraying two sets of statements orthogonally in a matrix format and then examining the intersection of each element of each statement, CCSS and DLS, in a unique cell. The relationship represented by that cell is then coded based on a categorization system designed to produce insight into how the two sets of statements, content standards and learning standards, interact with one another.

The CCSS, for the most part, describe content expectations, particularly in mathematics, and contain implied performance expectations, particularly in English/Language Arts. The DLS are informative of the teaching methods and learning strategies that could be used to ensure students retain each of the CCSS. Therefore, the crosswalk yields insight into the ways in which the DLS can support and enhance learning and retention of the CCSS by a wide range of students.

The crosswalk codes each relationship between the CCSS and the DLS into one of five potential categories. The categories suggest in some respects the intensity and depth of the connection between each DLS and each CCSS. The categories consider degree of alignment, whether the CCSS builds upon and is enhanced by the DLS, and the degree to which the DLS is a necessary or important factor in teaching the CCSS. The categories are described in Tables 2 and 3 below.

The Deeper Learning Skills included in the study are listed in Table 1 by category.

Table 1. The Deeper Learning Skills

Category	Skills
A. Content Knowledge	1. Master core academic content
	2. Acquire, apply, and expand knowledge
B. Cognitive Strategies	3. Think critically and solve complex problems
	4. Communicate effectively
C. Learning Behaviors	5. Work collaboratively
	6. Learn how to learn

Table 2. Coding Categories for Crosswalk

Code	Description
ACR	• Aligned Content Relationship: There is a direct alignment between the DLS and the CCSS; mastery of the CCSS requires the DLS.
PACR	• Partially Aligned Content Relationship: There is a partial direct match between the DLS and the CCSS; mastery of the CCSS requires the DLS, but the DLS alone is not sufficient for mastery of the CCSS.
PCR	• Prerequisite Content Relationship: Mastery on the CCSS does not require the DLS, although possessing the DLS is expected to significantly increase mastery of the CCSS.
CTLR	• Consistent Teaching/Learning Relationship: The DLS should be consistently incorporated by teachers and used by students when the CCSS is taught and learned.
ITLR	• Inconsistent Teaching/Learning Relationship: The DLS may or may not be consistently incorporated by teachers and used by students when the CCSS is taught and learned.

The analysis was conducted in two rounds. Round 1 used panels of six content experts to conduct a modified alignment analysis. In the second round, two expert reviewers, one in mathematics and one in English/Language Arts (ELA), completed the crosswalk using the findings from the first round and then noting where the DLS were required of students to demonstrate mastery of the category (for ELA and Literacy in History/Social Studies, Science, and Technical Subjects (LHST)) or domain (for Mathematics) level of the CCSS. They evaluated each match using the following convention:

Table 3. Definition and Decision Criterion for Each Category

Category	Definition	Decision Criterion
Aligned Content Relationship (ACR)	There is a direct alignment between the DLS and the CCSS; mastery of the CCSS requires the DLS.	Content matter and skills in the CCSS are stated in the same or equivalent terms as the DLS.
Partially Aligned Content Relationship (PACR)	There is a partial direct match between the DLS and the CCSS; mastery of the CCSS requires the DLS, but the DLS alone is not sufficient for mastery of the CCSS.	Content matter and implied skills in the CCSS are, as part of a larger description, stated in the same or equivalent terms as the DLS or stated in a way that is related to the DLS but does not match entirely.
Prerequisite Content Relationship (PCR)	Mastery on the CCSS does not require the DLS, although possessing the DLS is expected to significantly increase mastery of the CCSS.	Content matter and skills stated in the CCSS will be enhanced if students have familiarity or mastery of the DLS before the CCSS is taught, based on the general learning progression of the subject area.
Consistent Teaching/Learning Relationship (CTLR)	The DLS should be consistently incorporated by teachers and used by students when the CCSS is taught and learned.	Content matter and skills stated in the CCSS would be consistently learned and retained better if taught with the DLS.
Inconsistent Teaching/Learning Relationship (ITLR)	The DLS may or may not be consistently incorporated by teachers and used by students when the CCSS is taught and learned.	Content matter and skills stated in the CCSS would be inconsistently learned and retained better if taught with the DLS.

The cell-by-cell correspondence is presented in detail in separate Excel spreadsheets and is summarized below. In the Excel sheets, shaded cells indicate categories of relationships between the DLS and the CCSS, with darker areas corresponding to alignment and lighter areas corresponding to teaching/learning relationships. In addition to the shading, the extent of correspondence is noted by the abbreviations for the categories in the acronyms contained in Table 2.

The CCSS that were referenced are provided at the end of this document, by domain for Mathematics and by category for ELA and LHST. Note that although the level designations differ by subject area for the CCSS, they are of comparable grain size.

Key Findings

Overall, findings indicate that the CCSS are a strong foundation for learning and teaching the deeper learning skills as defined by the Hewlett Foundation. Deeper learning skills were consistently identified as being essential contributors to student mastery of the CCSS, even in areas with less than direct correspondence.

Key findings from the crosswalk analysis are presented by subject area:

English

- The greatest degree of correspondence between the CCSS and the DLS was observed in the following two DLS categories for English/Language Arts (ELA) and Literacy in History/Social Studies, Science, and Technical Subjects (LHST).
    - *Master Core Academic Content*
    - *Think Critically and Solve Complex Problems*
- The strongest relationships between the DLS and the CCSS occurred in the Speaking & Listening category of the CCSS.
    - The DLS *Master Core Academic Content* was embedded in 100% of the Speaking & Listening standards.
    - The DLS *Think Critically and Solve Complex Problems* was embedded in 100% of the Speaking and Listening standards.
    - The DLS *Work Collaboratively* had an Aligned Content Relationship, Partially Aligned Content Relationship, or Prerequisite Content Relationship with 97% of the Speaking and Listening standards.
- For Literacy in History/Social Studies, Science, and Technical Subjects (LHST), the greatest correspondence was observed in the Writing in History/Social Studies, Science, and Technical Subjects (WHST) category.
    - The DLS *Think Critically and Solve Complex Problems* was embedded in 93% of the WHST standards.
    - The DLS *Master Core Academic Content* was embedded in 88% of the WHST standards.
    - The DLS *Communicate Effectively* was embedded in 81% of the WHST standards.
- For the most part, a relationship existed between the DLS and the CCSS across all ELA categories and domains.
    - There was an Indirect Teaching and Learning Relationship (ITLR) observed for just 2% of the Writing standards, 1% of the Reading standards, and for none of the standards for Speaking and Listening.
    - Reviewers observed an ITLR between the DLS and the LHST CCSS for just 2% of the standards in the WHST category. In the other two LHST categories, an

ITLR was observed most frequently with the DLS *Work Collaboratively* and *Learn How to Learn*.
    - Across all Mathematics domains, an ITLR between the DLS and the CCSS was observed more frequently than in ELA or LHST, most often with the DLS *Work Collaboratively* and *Learn How to Learn*.

Mathematics

- The greatest degree of correspondence between the CCSS and the DLS was observed in the following two DLS categories for Mathematics.
    - *Master Core Academic Content*
    - *Think Critically and Solve Complex Problems*
- The strongest relationship between the CCSS and the DLS was observed in the Mathematical Practices domain of the CCSS.
    - 100% of the standards were prerequisite to the DLS *Work Collaboratively*.
    - The DLS *Master Core Academic Content* was embedded in 86% of the CCSS standards.
    - The DLS Communicate Effectively was embedded in 83% of the standards.
- For the most part, a relationship existed between the DLS and the CCSS across all Mathematics domains.
    - Across all Mathematics domains, an Inconsistent Teaching/Learning Relationship (ITLR) between the DLS and the CCSS was observed most often with the DLS *Work Collaboratively* and *Learn How to Learn*.

Discussion

The methodology employed for this study allowed reviewers to consider the ways in which the DLS may be present when the content knowledge described by the CCSS is taught and learned. Results demonstrate the extent to which the DLS are required by and embedded in the CCSS.

The CCSS are almost completely and intentionally silent on teaching methods or instructional philosophy. As the authors of the CCSS state in the introductory section of the English/Language Arts (ELA) standards, the CCSS attempt to describe the knowledge outcomes students should have to be college and career ready without necessarily dictating the processes, skills, and strategies students need to obtain these desired outcomes. The DLS address learning processes, strategies, and behaviors more explicitly. As a result, it is somewhat easier to identify overlap between some of the DLS that are more process or strategy oriented and the CCSS that imply or require learning strategies as an inherent component. For instance, the DLS that address student participation in and ownership of the learning process (*Engage in Expanding the Structure of Knowledge* and *Learn How to Learn*) and those necessary to develop and demonstrate effective communication and collaboration strategies (*Work Collaboratively* and *Communicate Effectively*) are often not explicitly represented in the CCSS.

The somewhat stronger relationship between the DLS and the CCSS for ELA can be traced back to the nature of the discipline, the structure of the standards, and the philosophy of the standards writers. Language skills tend to be developed more continuously and in a more integrated and holistic fashion than in mathematics, where skills are parsed and taught in sequences. Language proficiency development and measurement is largely achieved by means of exposure to increasingly more complex materials within familiar genres and some expansion of genres. For this reason, it is more difficult to specify entirely new discrete literacy skills beyond about the fifth grade. Literacy standards from this point on tend to be similar in nature as far as the basic concept areas. As a practical matter, the reading materials themselves or the writing tasks assigned tend to operationalize the actual standard, expectations, and instructional methods at each successive grade level.

The reviewers observed a relationship between the DLS and the CCSS for Literacy in History/Social Studies, Science, and Technical Subjects (LHST) that resembled the relationship between the DLS and the CCSS for ELA because both sets of CCSS are grounded in the ELA Anchor Standards for Reading and Writing. They differ in that the CCSS LHST are intended to complement the content standards in those disciplines, rather than replace them. For ELA, reading and writing are the content knowledge students ostensibly learn, whereas for LHST, reading and writing are tools that students use to learn content knowledge. Literacy in ELA requires reading a wide range of texts to develop cultural and literary knowledge and context, whereas literacy in History/Social Studies, Science, and Technical Subjects requires the acquisition of discipline-specific language and analytical skills necessary to develop an understanding of key concepts, terminology, and conventions of the subject area.

For Mathematics, the greatest correspondence between the CCSS and the DLS was observed in the Mathematical Practices domain. As is noted in Appendix 1, the Mathematics CCSS are different in content and structure from the English/Language Arts CCSS. The Mathematics standards consist primarily of distinct topical and conceptual areas of mathematics and the specific techniques, concepts, processes, and algorithms associated with each area. Additionally and separately, the Standards for Mathematical Practice state that the expectations for all domains of the Mathematics CCSS are expected to be taught and mastered cognitively in all grade levels. In this way, the writers of the CCSS hoped to convey the intent to have all of the detailed content specifications serve as frameworks for engaging and cognitively challenging mathematics teaching and learning. Thus it is expected that the DLS, which also describe practices for instruction rather than content knowledge, would have more correspondence with the Mathematical Practices than the other domains.

This crosswalk illustrates that it will be important to specify the ways in which the DLS integrate systematically and thoughtfully into teaching and learning. For example, educators implementing the CCSS may easily overlook the role of the Mathematical Practices in relation to the more detailed, skill-specific content domains in Mathematics. Similarly, the CCSS are intended to represent a learning progression that this crosswalk could not capture because it was limited to the College and Career Ready level of the CCSS.

The findings from the crosswalk can help inform implementation of the CCSS and development of curricula designed to teach the standards. First and foremost, education policymakers and practitioners should bear in mind that the goals of the CCSS are unlikely to be fully achieved by simply mapping the CCSS onto existing systems of standards. The CCSS have implications for curriculum and instruction that go beyond simple matches between the CCSS and current standards systems. Implementers need to pay attention to the cognitive complexity of the teaching and learning processes associated with the CCSS in particular. The Deeper Learning Skills are a framework for making connections between the CCSS and changes in curriculum and instruction necessary to implement the CCSS successfully. If this more sophisticated approach to conducting alignment studies is adopted, subsequent program realignment and redesign will be more likely to increase students' learning and retention of the content knowledge represented in the CCSS and will contribute better to the development of the cognitive and learning strategies associated with the CCSS.

Appendix 1. The Common Core State Standards Included in the Crosswalk

The Common Core State Standards that were included in the study are described in Tables 1, 2, and 3 below.

Table 1. The Common Core Standards—English Language Arts

Category	Standard
Writing	1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. 2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content. 3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. 6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. 8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
Reading	1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. 2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. 3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text. 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. 5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole. 6. Assess how point of view or purpose shapes the content and style of a text. 7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. 8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

	9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take. 10. Read and comprehend complex literary and informational texts independently and proficiently.
Speaking and Listening	1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively. 2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally. 3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric. 4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. 5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. 6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Table 2. The Common Core Standards—Literacy in History/Social Studies, Science, and Technical Subjects

Category	Standard
Writing	1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. 2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content. 3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. 6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. 8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. 9. Draw evidence from literary or informational texts to support analysis, reflection, and research. 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
History/ Social Studies*	1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. 2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. 3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text. 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. 5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole. 6. Assess how point of view or purpose shapes the content and style of a text. 7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. 8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. 9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take. 10. Read and comprehend complex literary and informational texts independently and proficiently.

Science and Technical Subjects*	1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. 2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. 3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text. 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. 5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole. 6. Assess how point of view or purpose shapes the content and style of a text. 7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. 8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence. 9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take. 10. Read and comprehend complex literary and informational texts independently and proficiently.
*_Note._ The CCSS for History/Social Studies and Science and Technical Subjects are grounded in the ELA Reading Anchor Standards; the CCSS for Writing in History/Social Studies, Science, and Technical Subjects are grounded in the ELA Writing Anchor Standards.	

Table 3. The Common Core Standards—Math

Domain	Standard
Mathematical Processes	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. 8. Look for and express regularity in repeated reasoning.
Number and Quantity	1. Extend the properties of exponents to rational exponents. 2. Classify numbers as rational or irrational. 3. Reason quantitatively and use units to solve problems. 4. Perform arithmetic operations with complex numbers. 5. Represent complex numbers and their operations on the complex plane. 6. Use complex numbers in polynomial identities and equations. 7. Represent and model with vector quantities. 8. Perform operations on vectors. 9. Perform operations on matrices and use matrices in applications.
Algebra	1. Interpret the structure of expressions. 2. Write expressions in equivalent forms to solve problems. 3. Perform arithmetic operations on polynomials. 4. Understand the relationship between zeros and factors of polynomials. 5. Use polynomial identities to solve problems. 6. Rewrite rational functions. 7. Create equations that describe numbers or relationships. 8. Understand solving equations as a process of reasoning and explain the reasoning. 9. Solve equations and inequalities in one variable. 10. Solve systems of equations. 11. Represent and solve equations and inequalities graphically.
Functions	1. Understand the concept of a function and use function notation. 2. Interpret functions that arise in applications in terms of the context. 3. Analyze functions using different representations. 4. Build a function that models a relationship between two quantities. 5. Build new functions from existing functions. 6. Construct and compare linear and exponential models and solve problems. 7. Interpret expressions for functions in terms of the situation they model. 8. Extend the domain of trigonometric functions using the unit circle. 9. Model periodic phenomena with trigonometric functions. 10. Prove and apply trigonometric identities.

Geometry	1. Experiment with transformations in the plane. 2. Understand congruence in terms of rigid motions. 3. Prove geometric theorems. 4. Make geometric constructions. 5. Understand similarity in terms of similarity transformations. 6. Prove theorems involving similarity. 7. Define trigonometric ratios and solve problems involving right triangles. 8. Apply trigonometry to general triangles. 9. Understand and apply theorems about circles. 10. Find arc lengths and areas of sectors of circles. 11. Translate between the geometric description and the equation for a conic section. 12. Use coordinates to prove simple geometric theorems algebraically. 13. Explain volume formulas and use them to solve problems. 14. Visualize relationships between two-dimensional and three-dimensional objects. 15. Apply geometric concepts in modeling situations.
Statistics and Probability	1. Summarize, represent, and interpret data on a single count or measurement variable. 2. Summarize, represent, and interpret data on two categorical and quantitative variables. 3. Interpret linear models. 4. Understand and evaluate random processes underlying statistical experiments. 5. Make inferences and justify conclusions from sample surveys, experiments, and observational studies. 6. Understand independence and conditional probability and use them to interpret data. 7. Use the rules of probability to compute probabilities of compound events in a uniform probability model. 8. Calculate expected values and use them to solve problems. 9. Use probability to evaluate outcomes of decisions.

Appendix 2. Crosswalk Analysis of Deeper Learning Skills to Common Core State Standards

English/Language Arts[1]

	Writing				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	68	14	8	10	0
2. Engage in expanding the structure of knowledge.	0	5	43	53	0
3. Think critically and solve complex problems.	49	15	23	14	0
4. Communicate effectively.	49	15	23	14	0
5. Work collaboratively.	47	10	17	27	0
6. Learn how to learn.	5	9	58	23	7
All DLS	32	10	38	21	2

	Reading				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	70	24	6	0	0
2. Engage in expanding the structure of knowledge.	8	15	75	3	0
3. Think critically and solve complex problems.	88	10	3	0	0
4. Communicate effectively.	17	7	35	37	5
5. Work collaboratively.	0	0	0	100	0
6. Learn how to learn.	0	0	67	34	0
All DLS	34	9	32	26	1

	Speaking & Listening				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	87	14	0	0	0
2. Engage in expanding the structure of knowledge.	17	30	38	17	0
3. Think critically and solve complex problems.	59	23	19	0	0
4. Communicate effectively.	62	25	12	3	0
5. Work collaboratively.	17	25	42	17	0
6. Learn how to learn.	5	25	32	40	0
All DLS	41	24	23	14	0

[1] *Note.* Totals may sum to more than 100 due to rounding.

Literacy in History/Social Studies, Science, and Technical Subjects[2]

	History/Social Sciences				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	38	30	12	18	2
2. Engage in expanding the structure of knowledge.	0	0	10	90	0
3. Think critically and solve complex problems.	15	40	29	17	0
4. Communicate effectively.	15	0	2	67	17
5. Work collaboratively.	0	0	0	90	10
6. Learn how to learn.	0	2	23	18	59
All DLS	12	14	15	43	18

	Science & Technical Subjects				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	56	30	14	0	0
2. Engage in expanding the structure of knowledge.	0	0	43	58	0
3. Think critically and solve complex problems.	29	23	34	15	0
4. Communicate effectively.	15	4	9	72	2
5. Work collaboratively.	0	0	0	15	85
6. Learn how to learn.	0	0	13	25	63
All DLS	18	11	20	30	24

	Writing				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	18	38	32	12	0
2. Engage in expanding the structure of knowledge.	0	10	25	65	0
3. Think critically and solve complex problems.	42	28	23	8	0
4. Communicate effectively.	54	15	12	20	0
5. Work collaboratively.	10	0	0	90	0
6. Learn how to learn.	13	5	48	30	6
All DLS	26	17	25	32	2

[2] *Note.* Totals may sum to more than 100 due to rounding.

Mathematics[3]

DLS	Mathematical Practices				
	% ACR	% PACR	% PCR	% CTLR	% ITLR
1. Master core academic content.	30	48	8	10	5
2. Engage in expanding the structure of knowledge.	7	0	13	4	79
3. Think critically and solve complex problems.	19	54	10	13	7
4. Communicate effectively.	11	17	11	9	55
5. Work collaboratively.	0	0	100	0	0
6. Learn how to learn.	2	7	0	0	93
All DLS	12	24	18	7	42

DLS	Number & Quantity				
	% ACR	% PACR	% PCR	% CTLR	% ITLR
1. Master core academic content.	49	16	3	7	27
2. Engage in expanding the structure of knowledge.	0	0	25	23	53
3. Think critically and solve complex problems.	17	6	2	5	73
4. Communicate effectively.	10	2	2	0	88
5. Work collaboratively.	0	0	0	0	100
6. Learn how to learn.	0	0	0	0	100
All DLS	13	4	4	5	76

DLS	Algebra				
	% ACR	% PACR	% PCR	% CTLR	% ITLR
1. Master core academic content.	28	39	0	8	28
2. Engage in expanding the structure of knowledge.	0	0	28	30	44
3. Think critically and solve complex problems.	8	13	0	15	65
4. Communicate effectively.	8	2	2	7	84
5. Work collaboratively.	0	0	0	0	100
6. Learn how to learn.	0	0	0	0	100
All DLS	8	9	4	9	73

[3] *Note.* Totals may sum to more than 100 due to rounding.

	Functions				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	46	28	6	8	12
2. Engage in expanding the structure of knowledge.	0	0	63	3	35
3. Think critically and solve complex problems.	9	19	10	19	44
4. Communicate effectively.	7	2	0	5	87
5. Work collaboratively.	0	0	0	0	100
6. Learn how to learn.	0	0	0	0	100
All DLS	11	10	12	8	71

	Geometry				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	40	36	2	6	18
2. Engage in expanding the structure of knowledge.	0	0	69	0	32
3. Think critically and solve complex problems.	19	30	6	16	31
4. Communicate effectively.	2	14	0	2	85
5. Work collaboratively.	0	0	0	0	100
6. Learn how to learn.	0	0	0	0	100
All DLS	11	15	10	5	62

	Statistics & Probability				
DLS	**% ACR**	**% PACR**	**% PCR**	**% CTLR**	**% ITLR**
1. Master core academic content.	54	29	0	16	3
2. Engage in expanding the structure of knowledge.	0	0	67	0	34
3. Think critically and solve complex problems.	0	24	0	19	59
4. Communicate effectively.	6	4	0	0	91
5. Work collaboratively.	0	0	0	0	100
6. Learn how to learn.	0	0	0	0	100
All DLS	9	11	8	7	68