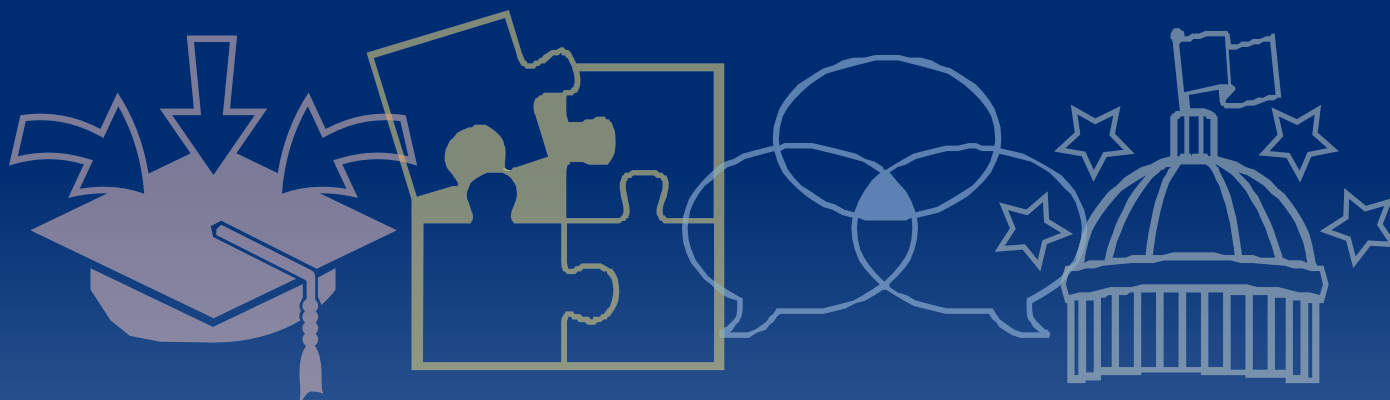# JOHNS HOPKINS
SCHOOL *of* EDUCATION

Institute for Education Policy

ELA Knowledge Map™

HMH

A unique analytic resource enabling policymakers, school leaders, and parents to better understand the strengths and weaknesses of the HMH Into Reading Grades K-6 English language arts curriculum.

Winter 2022

The achievement gap is, in large part, a knowledge gap. Compelling research strongly affirms that students' reading levels – particularly from fifth grade onwards – relate deeply to their level of background content knowledge[i] Students in more affluent systems demonstrate more success in skill-based English language arts (ELA) assessments not only because they are better at "recognizing main ideas," but also because they are far more likely to know more about the subject matter discussed in any given text. Research from around the world shows the same: Most democracies around the world require all schools to teach a standard body of knowledge; and a comprehensive, content-rich curriculum is a signature feature of high-performing education systems. Despite the research record, a large number of the United States' ELA curricula treat texts not as a source of building knowledge, but merely as a site for attempting to hone abstract reading skills.

Determining whether a particular ELA curriculum is "standards aligned" is a helpful step, but it does not tell us about the knowledge-building capacity of that curriculum.[ii] For example: Instructional materials may use publisher-written texts that satisfy the standards-based requirement for "textual complexity," but if the materials fail to offer students a sequenced, knowledge-rich learning experience simultaneously, they miss a critical opportunity to build reading fluency. Merely drilling students on "finding the main idea" will never help them become better readers. Instead, they need to understand what the text is really about - something that can only be achieved by encountering the background knowledge that pertains.

The Johns Hopkins Institute for Education Policy (Institute) has developed the ELA Knowledge Map™, a tool with which to evaluate an ELA curriculum in terms of the knowledge it offers students, both about the world (mainly through nonfiction texts) and about psychology and the human condition (through both nonfiction and fiction texts). The Institute conducts this analysis by "mapping" the knowledge domains implicit in the selection of the documents to be read, while also evaluating each text's quality and the coherence of the unit in which is taught. To measure coherence, we assess the degree to

which supporting materials in a unit amplify and deepen the specific knowledge offered in the anchor text.

Each review generates two visual reports: *Knowledge Heat Maps* and *Unit Coherency Maps*.[1] The maps depict the fields of knowledge opened and those missed, in each grade and cumulatively, and with what quality of texts.

The Knowledge Map™ is a one-of-a-kind analytic resource that enables policymakers, school leaders, and parents to better understand the overall strengths and weaknesses of a given curriculum; instructional leaders to "fill in gaps" that might exist; and publishers to continuously improve the materials they offer the public.

For the following report, the Institute evaluated the HMH Into Reading curriculum for Grades K-6. This analysis covers a representative sample based on materials provided by the system and does not account for more specific variety in the selected texts.

METHODOLOGY

- The Institute maps all items in the evaluated grades on three initial dimensions and at different grain sizes of coverage. For example, a letter by abolitionist Thomas Garrett about Harriet Tubman would be categorized like so:
  - **Domain:** U.S. History to 1865
  - **Topic:** Slavery/Abolition
  - **Subtopics:** Harriet Tubman; Underground Railroad
- The Institute evaluates the quality of every student-facing resource both individually and in the broader context of the unit.
- The Institute constructs a vertical mapping of the knowledge domains at each level, first by grade and then across multiple grades.
- The Institute creates a coverage report that visually illustrates the depth of emphasis a given domain receives across the grades.

HIGH-LEVEL FINDINGS

Into Reading is a comprehensive ELA curriculum, providing instruction in phonics, reading, vocabulary, grammar, and writing. It incorporates an engaging variety of sources in multiple media formats.

Insights discussed throughout this report derive from several evaluations, including heat maps, coherency charts, and quality maps. This analysis presents several specific strengths and weaknesses.

The heat map analysis shows that several knowledge-building domains are strong, such as Science and Social-Emotional domains, because they build topical knowledge and knowledge across grade bands. Additionally, moderate knowledge-building domains, such as American History, have strong topical areas, such as American Ideals and Culture & Tradition. However, the analysis also shows several weaker knowledge-building domains. The curriculum doesn't do a strong job of building knowledge in domains such as Government, Civics, & Citizenship and Mathematics & Reason – neither in any given

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[1] Unit coherency maps will only be generated if the curriculum materials enable that form of analysis.

grade-level nor across grade bands. Finally, certain strong knowledge-building domains, such as Science, have weak topical areas, such as Social Sciences and Chemistry.

The 6th grade shows strong knowledge-building in the Emotions, Being, and Personal Psychology domain across topics. 6th grade materials also include strong knowledge-building in Technology and Concepts & Language. Weaker domains for the 6th grade include Philosophy Proper, Religion, and Economics.

The results of our quality analyses reveal generally strong texts across the entire curriculum. Grades 3, 4, and 5 have high quality texts with only moderate differences between high- and low-quality scores. Grades K, 1, 2, and 6 have acceptable quality texts when measured against the Institute's rubrics, but these grades demonstrate a larger range of differences between high- and low-quality scores, highlighting the inconsistency in text quality from unit to unit.

INSTITUTE RECOMMENDATIONS

The Into Reading ELA curriculum improves knowledge building through diverse topical coverage, quality texts, and units that reinforce thematic knowledge building. The Knowledge Map™ analysis highlights these crucial areas of knowledge building and assesses associated strengths and weaknesses as well as text quality. Based on this analysis, the Institute recommends the following strategies for improvement:

- Ensure proper coverage in key knowledge domains by diversifying the topical coverage. For example, Grades K, 1, 2, 3, and 5 all have at least one unit dedicated to animals. To increase domain coverage, a unit with a focus on world geography, which incorporates materials on animals' habitats, could diversify the knowledge exposures.

- Increase the reinforcement of knowledge building within and between domains, where low, by examining units in which the themes would logically connect to other weaker knowledge domains, making sure to pull in high-quality materials for support. For example, with strong coverage of the Global Literature topic in the Regional Literature domain in grades K - 5, there could be opportunities to bring in materials about the cultures, places, and even locations from which these stories come. Looking more specifically, in Grade 4, students are introduced to *Perseus and the Fall of Medusa*, but there are no correlating texts on Ancient Greece.

- Consider stronger grade level knowledge progressions by increasing the rigor of topics. For example, July 4th appears as strong topic within the units of Grades K (Home of the Free and Brave), 1 (Celebrate America), and 3 (Let Freedom Ring!). However, there are no texts on the American Revolution & American Founding topic in kindergarten, two in first grade, and three in third grade. Providing a stronger historical background would increase the strength of the knowledge build and deepen understanding.

- Improve the quality and coherence of units, where low, by examining texts that do not support the knowledge build and consider supplementing or replacing them with materials that do support the domain. For example, *Handmade* in Unit 7 of Grade 1 has a lower coherency score because it does not support the common topic of Geology and Earth Science in the unit's theme, The Big Outdoors.

- Increase the quality of units by replacing lower quality texts, especially those with lower coherency, with higher quality texts. For example, in unit 1 of grade 5, *Captain Arsenio*, has a quality score of 53%. Moreover, while the other texts work to support the unit's theme of Inventors at Work with topical coverage in Technology & Invention in the Science domain, this text supports the disparate topics of Characteristics of Genres of the Regional Literature domain and Conflict Resolution of the Social-Emotional domain.

The report will now elaborate on the specific findings of the Knowledge Map™ exercises.

HMH INTO READING KNOWLEDGE/HEAT MAPS: GRADES K-5

One of the Institute's critical gateway questions addresses the level of exposure children receive to each important domain of knowledge and to the topics within those domains. Each heat map expresses the findings visually using a color-coding scheme, as shown in Figure 1 below. Lighter blue squares represent fewer knowledge-building texts, such as one or no text, while darker blue squares represent more knowledge-building texts, such as eight or more. The results for each of the topical domains in Grades K-6 appear in the figures below. Additionally, texts that do not provide robust exposure to any topic are marked with the 'No Meaningful Knowledge' tag; results of that tagging system can also be found below.

A mere mention of a topic does not necessarily indicate exposure to that topic. The Institute tags a topic only when the text's presentation of it is robust enough for a student to convey specific facts about it. This metric considers the context of age and grade level.

No Text	1 Text	2-4 Texts	5-7 Texts	8+ Texts

Figure 1. Heat map color-coded rating scheme of knowledge building, where lighter blue indicates fewer texts and darker blue indicates a larger number of texts.

Strong Knowledge-Building Domains

The curriculum presents robust knowledge building in several domains and additional topics, shown below alphabetically when similarly rated. Strong knowledge-building domains appear in the Heat Maps as dark blue, indicating that many texts address the topic (for instance, the heat map categories of 8+ Texts or 5-7 Texts).

Figures 2-6 show the strong knowledge-building domains for Grades K-5. These domains include Communities (Figure 2), Concepts & Language (Figure 3), Regional Literature (Figure 4), Science (Figure 5), and Social-Emotional (Figure 6). These domains addressed all or most of the topics in each grade band with many supporting texts.
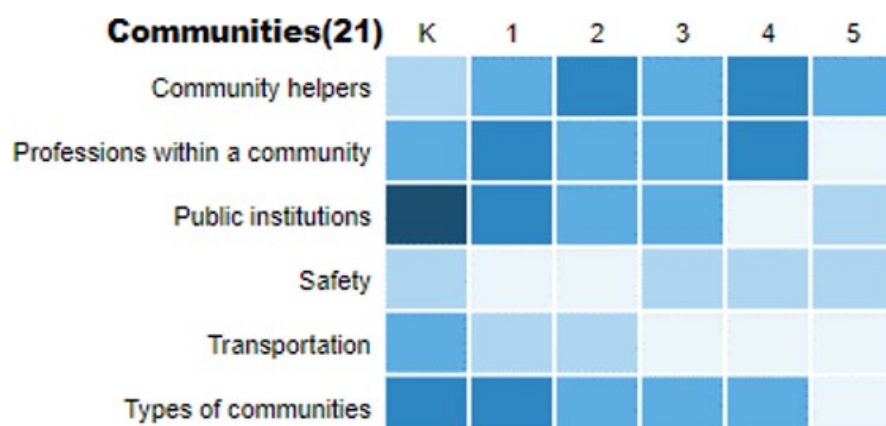
Figure 2. Heat map analysis of the Communities knowledge domain in Grades K-5.
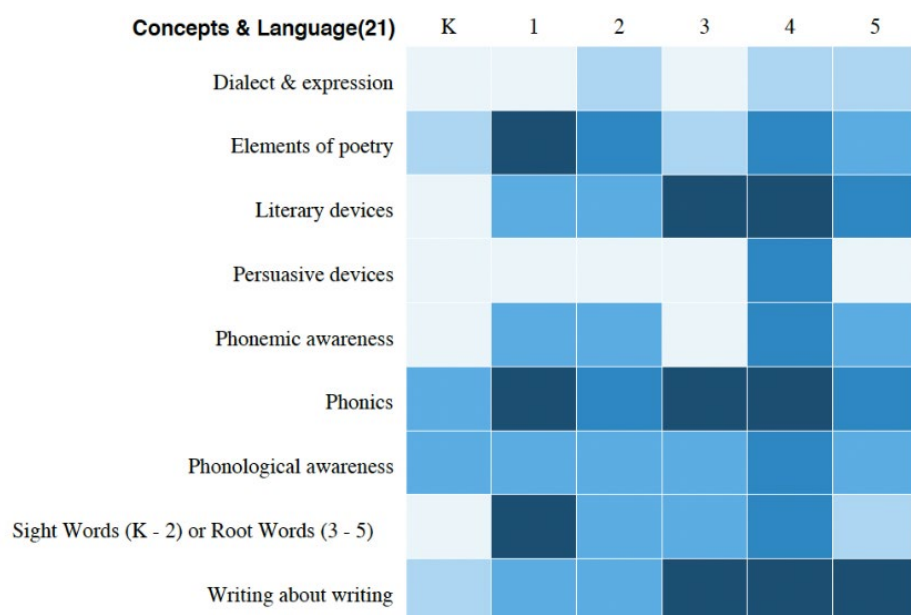

Figure 3. Heat map analysis of the Concepts & Language knowledge domain in Grades K-5.
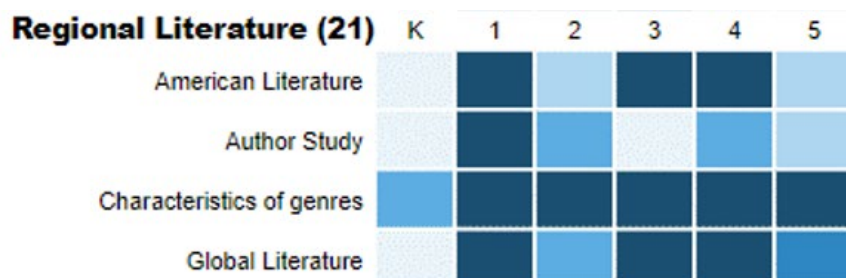

Figure 4. Heat map analysis of the Regional Literature knowledge domain in Grades K-5.
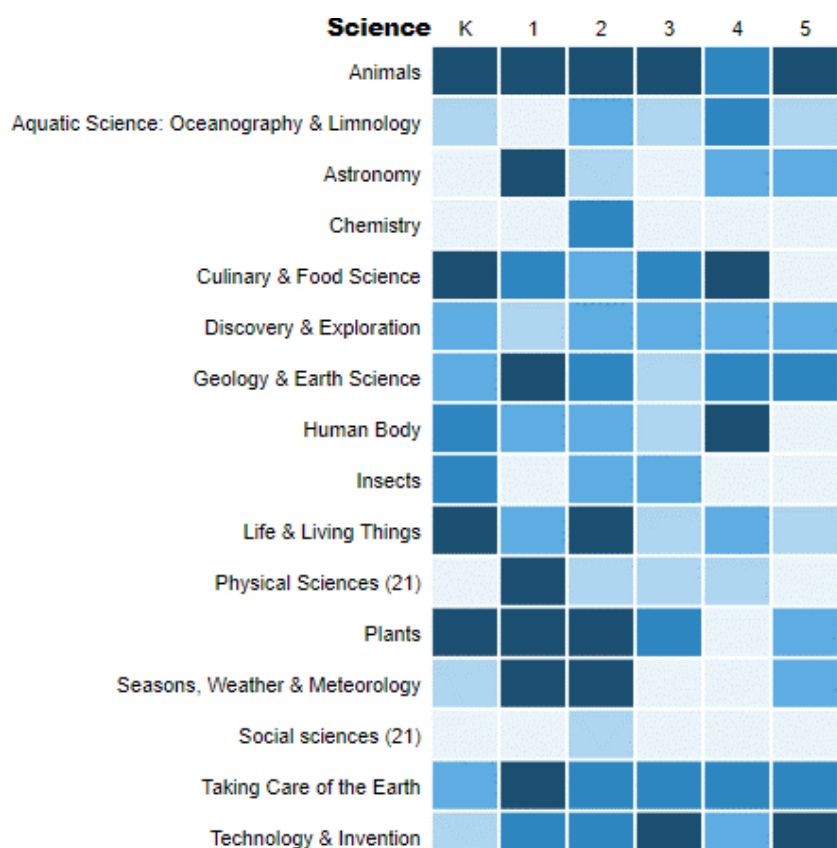
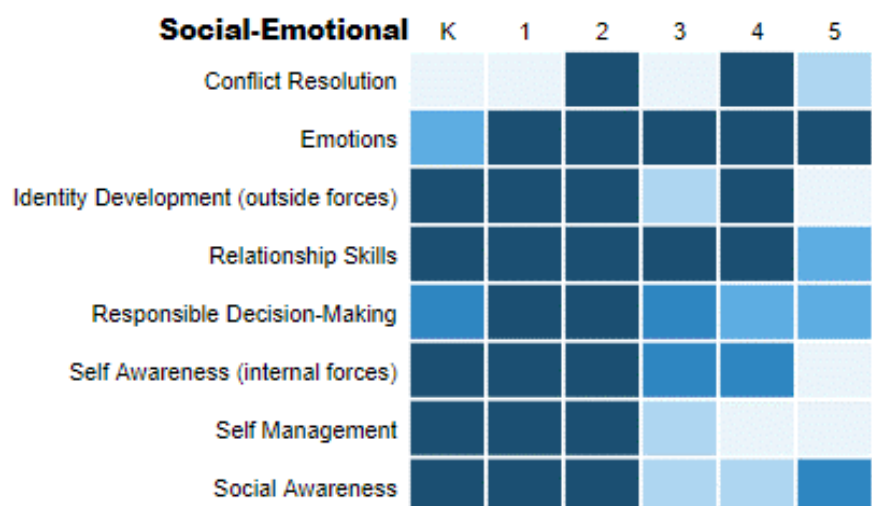Figure 5. Heat Map analysis of the Science knowledge domain in Grades K-5.

Figure 6. Heat map analysis of the Social-Emotional knowledge domain in Grades K-5.

Additional knowledge domains exhibit patterns of strength in specific topics across grade bands. One pattern appears as large numbers of texts on a particular topic across all grades. For instance, within the moderate knowledge-building domain of American History (Figure 7, below), the topic of American Ideals, Culture, & Tradition is strong across all grades. A second pattern shows large numbers of texts

across domain topics within an individual grade band. For instance, within the moderate knowledge-building domain of Music & Performing Arts (Figure 8, below), Grade 4 has strong text representation.

Moderate Knowledge-Building Domains

The curriculum presents several moderate knowledge-building domains and topics. Moderate knowledge-building domains appear in the Heat Maps as mixed blue, indicating that few or some texts address the topics within them (for instance, the heat map category of 2-4 Texts).

Figures 7-9 show the moderate knowledge-building domains for Grades K-5. These domains include American History (Figure 7), Music & Performing Arts (Figure 8), and Visual Arts (Figure 9). The domains addressed many topics in most or some of the grade bands and with several supporting texts.
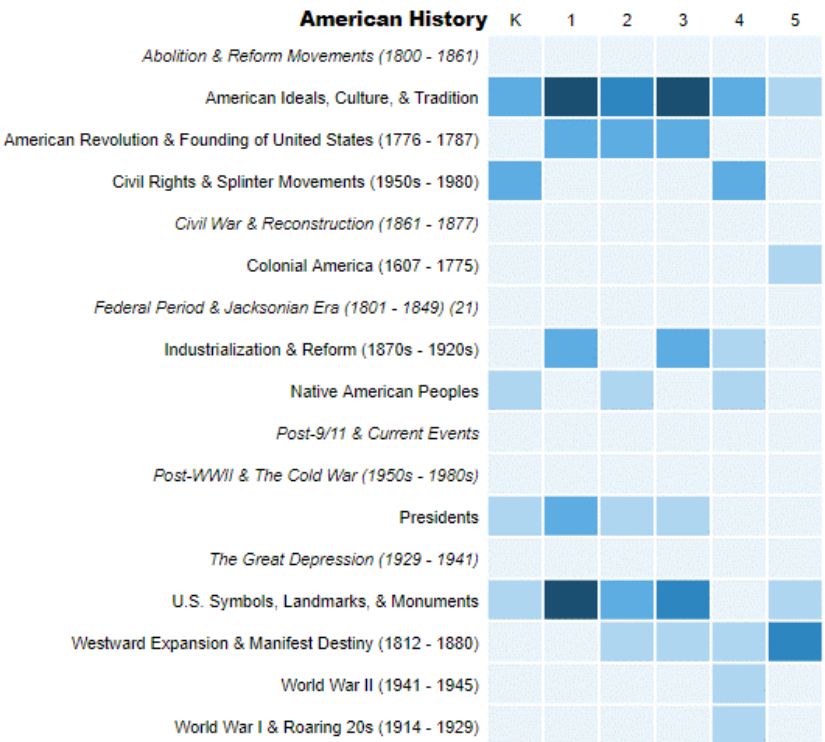

Figure 7. Heat map analysis of the American History knowledge domain in Grades K-5.
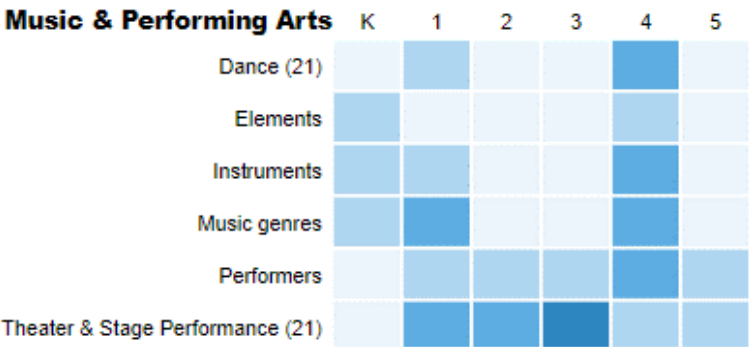

Figure 8. Heat map analysis of the Music & Performing Arts knowledge domain in Grades K-5.
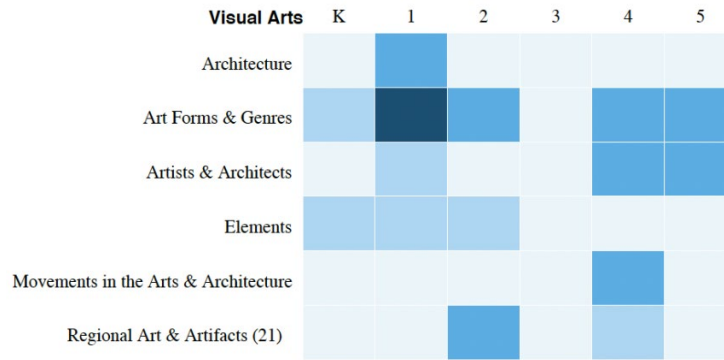
Figure 9. Heat map analysis of the Visual Arts knowledge domain in Grades K-5.

Other domains present specific patterns of moderate knowledge building. One pattern appears as moderate coverage in topics across grade levels. For instance, in the weak knowledge-building domain World Geography (Figure 14), the topic of Place & Region has moderate text support. A second pattern demonstrates moderate numbers of texts across a domain's topics at individual grade levels. For instance, in the strong knowledge-building domain Communities (Figure 2), Grade 3 shows moderate text support.

Minimal Knowledge-Building Domains

The curriculum presents minimal knowledge building in several knowledge domains and topics. Weak knowledge-building domains appear in Heat Maps as primarily light blue or gray, indicating that one or no texts address the topic. It is important to note that absences at certain levels may reflect curricular progression decisions and other factors, and that the Heat Maps should be considered in the context of the curriculum as a whole, and its intended student audience. However, significant gaps may be worth examining in order to further develop knowledge reinforcement within the curriculum.

Figures 10-16 show the minimal knowledge-building domains for Grades K-5. These domains include Government, Civics, & Citizenship (Figure 11), Mathematics & Reason (Figure 12), World Geography (Figure 14), and World History (Figure 15). The domains addressed some topics in some of the grade bands and with few supporting texts. Two domains are empty, Economics (Figure 10) and Religion & Philosophy (Figure 13).
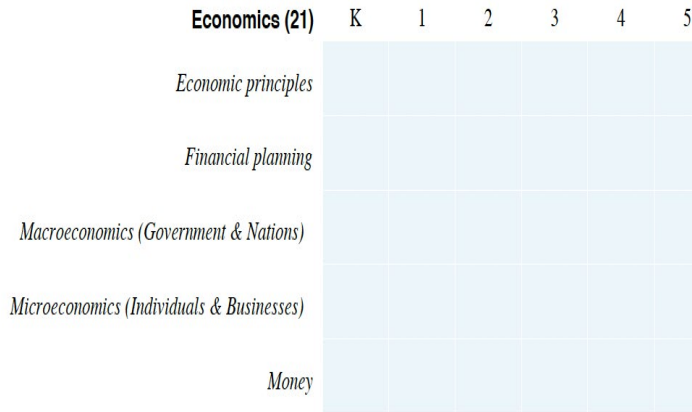
Figure 10. Heat map analysis of the Economics knowledge domain in Grades K-5.

Figure 11. Heat map analysis of the Government, Civics, & Citizenship knowledge domain in Grades K-5.
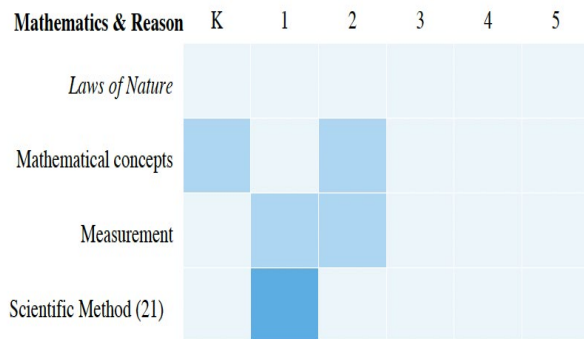

Figure 12. Heat map analysis of the Mathematics & Reason knowledge domain in Grades K-5.
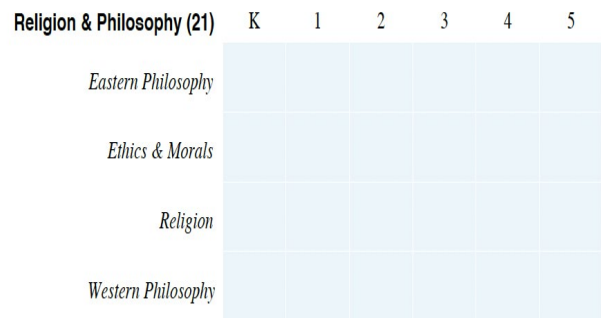

Figure 13. Heat map analysis of the Religion & Philosophy knowledge domain in Grades K-5.
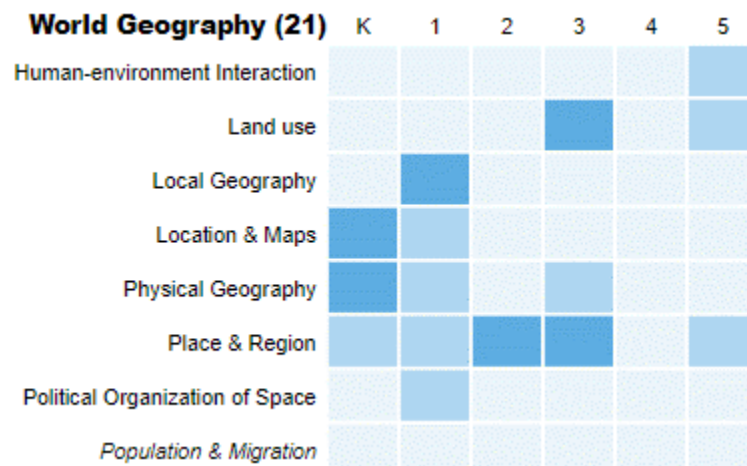

Figure 14. Heat map analysis of the World Geography knowledge domain in Grades K-5.
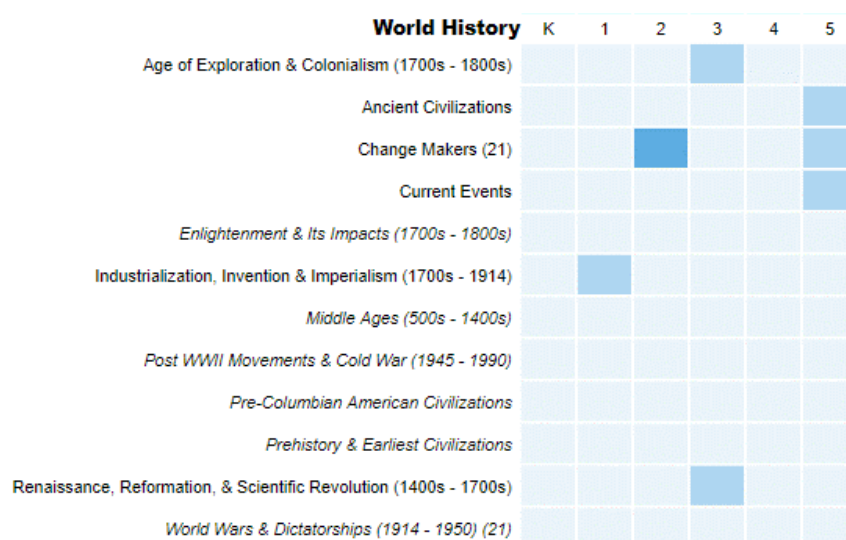
World History	K	1	2	3	4	5
Age of Exploration & Colonialism (1700s - 1800s)				▨		
Ancient Civilizations						▨
Change Makers (21)			▨			▨
Current Events						▨
Enlightenment & Its Impacts (1700s - 1800s)						
Industrialization, Invention & Imperialism (1700s - 1914)		▨				
Middle Ages (500s - 1400s)						
Post WWII Movements & Cold War (1945 - 1990)						
Pre-Columbian American Civilizations						
Prehistory & Earliest Civilizations						
Renaissance, Reformation, & Scientific Revolution (1400s - 1700s)				▨		
World Wars & Dictatorships (1914 - 1950) (21)						

Figure 15. Heat map analysis of the World History knowledge domain in Grades K-5.

Besides these generally weaker domains, other knowledge domains present specific patterns of weakness. One pattern appears as an absence of texts regarding specific topics across grade levels. For instance, within the strong knowledge-building domain Science (Figure 5), the topics of Chemistry and Social Sciences are weak. An additional pattern of weakness presents itself as a lack of domain coverage within a grade band. Visually, this appears in the Knowledge Map™ as empty columns beneath individual grade levels. For instance, in the moderate knowledge-building domain Music & Performing Arts (Figure 8), Grade 5 presents greater absences.

Diversity, Equity, & Inclusion Domains for Grades K-6

Among the domains evaluated as part of the heat map exercise is the Diversity, Equity, & Inclusion domain, which measures the presence of texts addressing the experiences of specific cultural groups. Ideally, culturally responsive texts should represent a spectrum of positive, neutral, and negative aspects of a group's experience in the United States. Heat Maps with strong results for the Diversity, Equity, & Inclusion domain indicate that students receive meaningful instruction related to these experiences. Many academic materials can be rated for cultural responsiveness, including everything from picture books to documentary films. The Institute reviewed Into Reading's materials for cultural responsiveness across all the evaluated grade levels.

Figure 16 shows the Diversity, Equity, & Inclusion knowledge-building domain. Overall, it is a moderate knowledge-building domain. Specific strengths include strong text representation in Grade 6 and on the topics of African American Experience, Latinx & Hispanic Experience, and World Culture & Traditions. Examples of moderate knowledge building occur within Grades 2 and 4 and in the topics of Asian American Experience, Native American Experience, and Women's Experience. Examples of weak knowledge-building include Grades K, 1, 3, and 5 and the topics Bias & Implicit Bias, Different Types of Families, and Structural Inequalities. Empty areas without any texts include Grade 5 and the topic of LGBTQIA+ Experience.
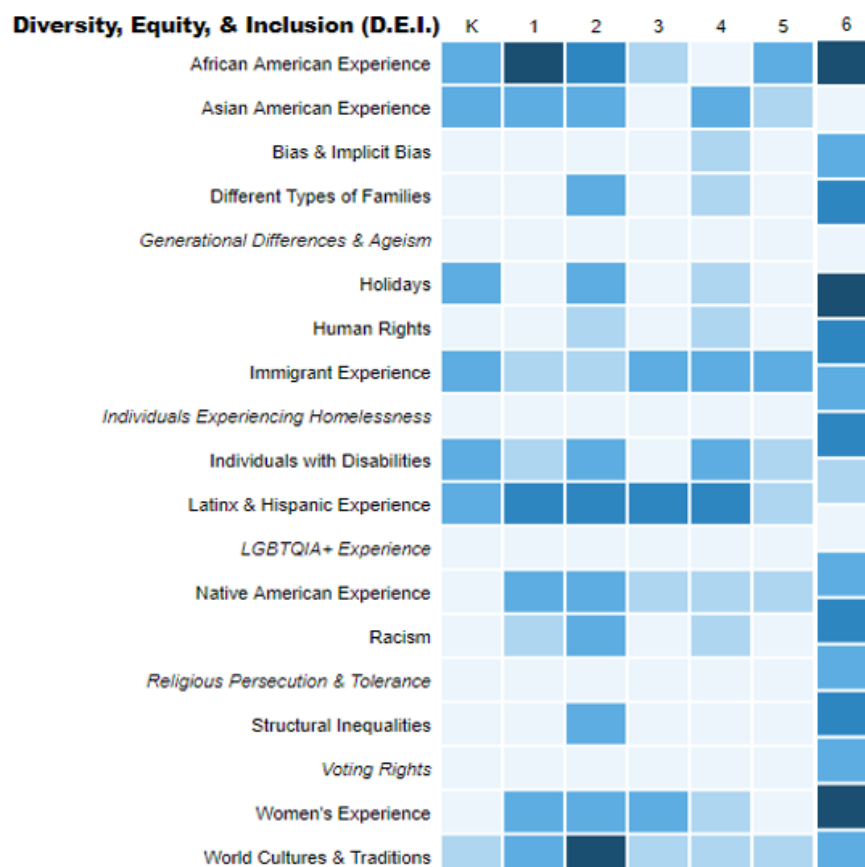
Figure 16. Heat map analysis of the Diversity, Equity, & Inclusion knowledge domain in Grades K-6.

HMH INTO READING KNOWLEDGE/HEAT MAPS: GRADE 6

The Institute's heat map analysis of the Into Reading curriculum continues into Grade 6; as a secondary-education grade level, this grade was evaluated using the appropriate knowledge domains, hence its separate section in this report. The results for each of the topical domains in Grade 6 appear in the figures below. Additionally, texts that do not provide robust exposure to any topic are marked with the 'No Meaningful Knowledge' tag; results of that tagging system can also be found below.

Strong Knowledge-Building Domains

The curriculum presents robust knowledge building in several domains and additional topics, shown below alphabetically when similarly rated. Strong knowledge-building domains appear in the Heat Maps as dark blue, indicating that many texts address the topic (for instance, the heat map categories of 8+ Texts or 5-7 Texts).

Figures 18-21 show the strong knowledge-building domains for Grade 6. These domains include Concepts & Language (Figure 17), Emotions, Being & Personal Psychology (Figure 18), and Technology (Figure 19). The domains addressed all or most of the topics in Grade 6 with many supporting texts.
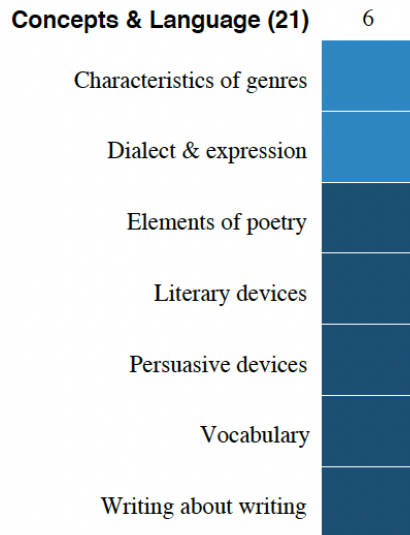
Concepts & Language (21)　　6

Characteristics of genres
Dialect & expression
Elements of poetry
Literary devices
Persuasive devices
Vocabulary
Writing about writing

Figure 17. Heat map analysis of the Concepts & Language knowledge domain in Grade 6.

Emotions, Being, & Personal Psychology　　6

Ambition
Big Questions
Character Development
Coming of Age
Death
Ethical Behavior
Fate
Fear
Heroism
Human Condition
Human Fallibility
Love
Moral Dilemmas
Relationships
The Self
Trauma

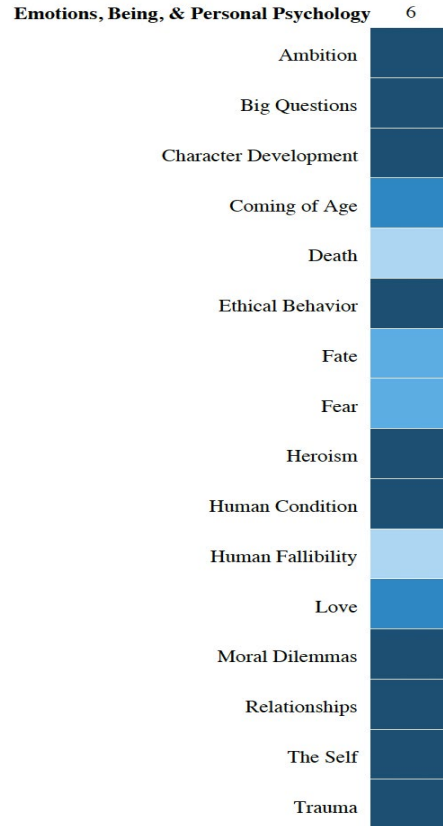*Figure 18. Heat map analysis of the Emotions, Being, & Personal Psychology knowledge domain in Grade 6.*

Technology　　6

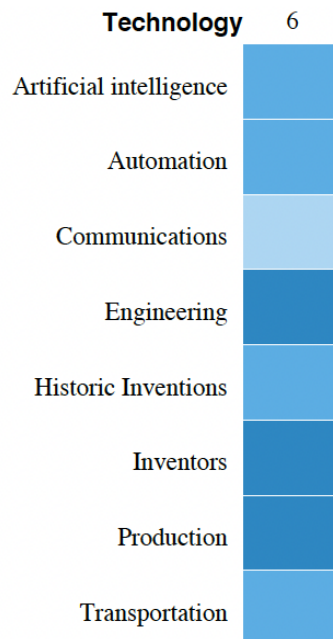| |
|---|
| Artificial intelligence |
| Automation |
| Communications |
| Engineering |
| Historic Inventions |
| Inventors |
| Production |
| Transportation |

Figure 19. Heat map analysis of the Technology knowledge domain in Grade 6.

Moderate Knowledge-Building Domains

The curriculum presents several moderate knowledge-building domains and topics. Moderate knowledge-building domains appear in the Heat Maps as mixed blue, indicating that few or some texts address the topics within them (for instance, the heat map category of 2-4 Texts).

Figures 21-28 show the moderate knowledge-building domains for Grade 6. These domains include Government & Political Science (Figure 20), Life Sciences (Figure 21), Music, Arts, & Architecture (Figure 22), Social Sciences (Figure 23), US History Since 1865 (Figure 24), World History Since 1600 (Figure 25), World History to 1600s (Figure 26), and World Geography (Figure 27). The domains addressed most or many of the topics in Grade 6 with several supporting texts.
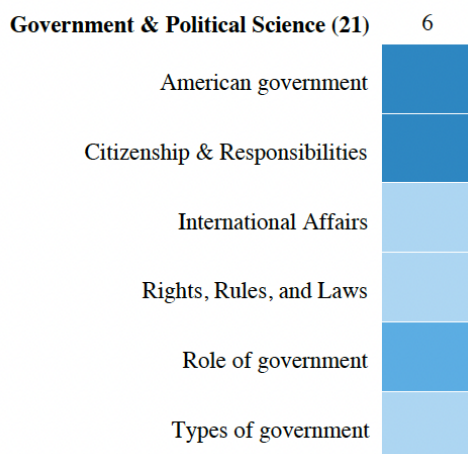

Figure 20. Heat map analysis of the Government & Political Science knowledge domain in Grade 6.
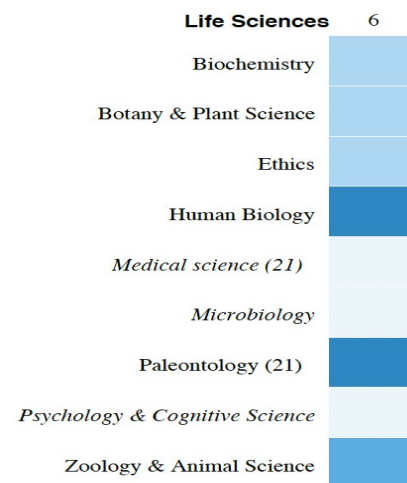

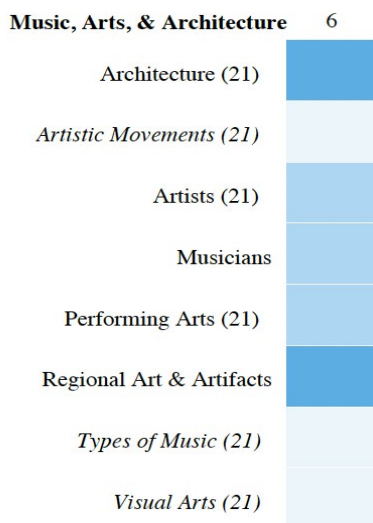Figure 21. Heat map analysis of the Life Sciences knowledge domain in Grade 6.

Figure 22. Heat map analysis of the Music, Arts, & Architecture knowledge domain in Grade 6.
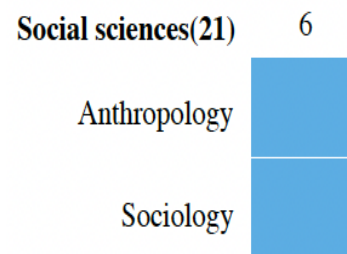

Figure 23. Heat map analysis of the Social Sciences knowledge domain in Grade 6.
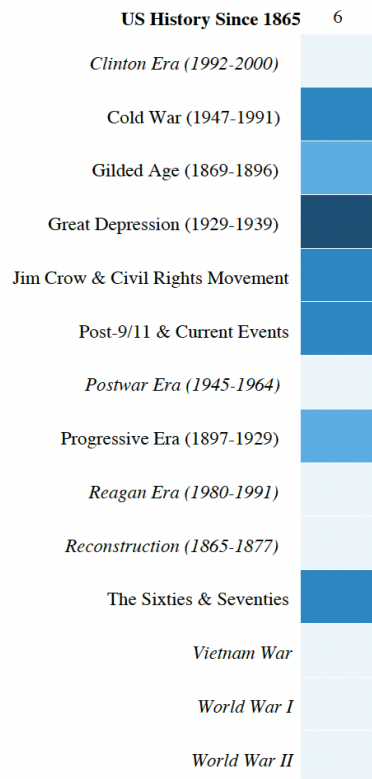
US History Since 1865 6

Clinton Era (1992-2000)
Cold War (1947-1991)
Gilded Age (1869-1896)
Great Depression (1929-1939)
Jim Crow & Civil Rights Movement
Post-9/11 & Current Events
Postwar Era (1945-1964)
Progressive Era (1897-1929)
Reagan Era (1980-1991)
Reconstruction (1865-1877)
The Sixties & Seventies
Vietnam War
World War I
World War II

Figure 24. Heat map analysis of the US History Since 1865 knowledge domain in Grade 6.

World History Since 1600 6

Change Makers
Enlightenment & Its Impacts (1650s - 1790s)(21)
Imperialism & Empires (1800s - 1914)
Industrial Revolutions & Invention (1700s - 1800s)
Post Cold War Events (1990s -)(21)
Post-World War II Revolutions & Cold War(1945 - 1990s)
World Wars (1900s - 1950s) (21)

Figure 25. Heat map analysis of the World History Since 1600 knowledge domain in Grade 6.

World History to 1600s 6

Age of Exploration & Colonialism (1500s - 1700s)
Ancient Civilizations
Change Makers (21)
Middle Ages (21)
Pre-Columbian America
Prehistory & Earliest Civilizations
Renaissance & Reformation (21)
Scientific Revolution (21)
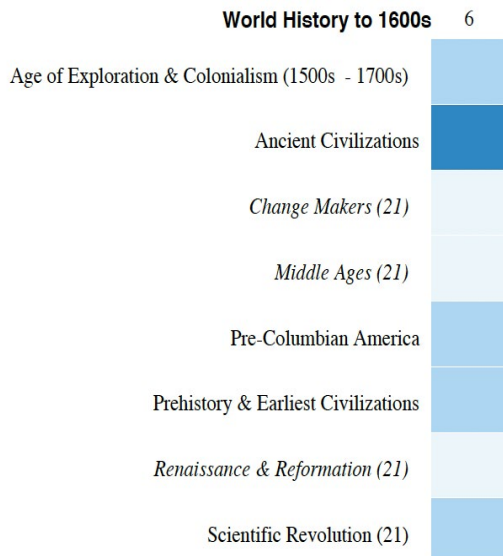
Figure 26. Heat map analysis of the World History to 1600s knowledge domain in Grade 6.

World Geography 6

Human-environment interaction
Land Use
Local Geography
Location & Maps
Physical geography
Place & Region (21)
Political organization of space
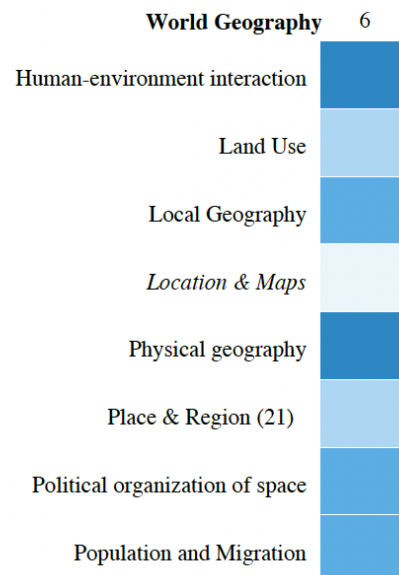Population and Migration

Figure 27. Heat map analysis of the World Geography knowledge domain in Grade 6.

Minimal Knowledge-Building Domains

The curriculum presents minimal knowledge building in several knowledge domains and topics. Weak knowledge-building domains appear in Heat Maps as primarily light blue or gray, indicating that one or no texts address the topic.

Figures 29-36 show the minimal knowledge-building domains for Grade 6. These domains include American Literature (Figure 28), British Literature (Figure 29), Economics (Figure 30), Global Literature (Figure 31), Philosophy Proper (Figure 32, Physical Sciences (Figure 33), and US history to 1865 (Figure 35). Most of these domains addressed some topics in Grade 6 with few supporting texts. One domain, Religion (Figure 34), is completely empty.
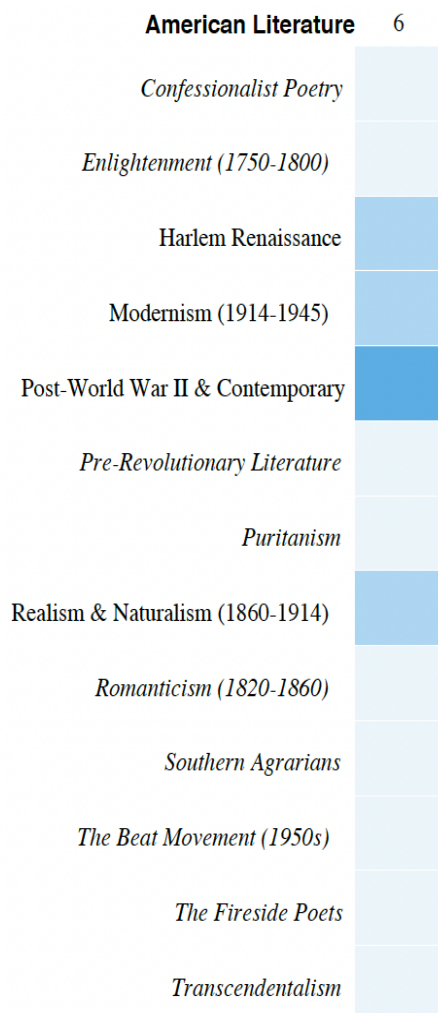
American Literature	6
Confessionalist Poetry	
Enlightenment (1750-1800)	
Harlem Renaissance	
Modernism (1914-1945)	
Post-World War II & Contemporary	
Pre-Revolutionary Literature	
Puritanism	
Realism & Naturalism (1860-1914)	
Romanticism (1820-1860)	
Southern Agrarians	
The Beat Movement (1950s)	
The Fireside Poets	
Transcendentalism	

Figure 28. Heat map analysis of the American Literature knowledge domain in Grade 6.

British Literature	6
Early & Middle English	
Edwardian (1901-1914)	
Elizabethan Era (1558-1603)	
Irish Literature	
Jacobean Era (1603-1625)	
Post-World War II & Contemporary	
Religious Authors	
Romanticism (1789-1832)	
Shakespeare	
The Long 18th Century (1688-1815)	
The Restoration (1625-1688)	
Victorian (1832-1901)	
World Wars & Inter-War (1914-1945)	

Figure 29. Heat map analysis of the British Literature knowledge domain in Grade 6.

Economics (21)   6

	6
Economic principles	
Financial Institutions	
Financial planning	
Macroeconomics (countries & governments)	
Microeconomics (individuals & business)	
Money	
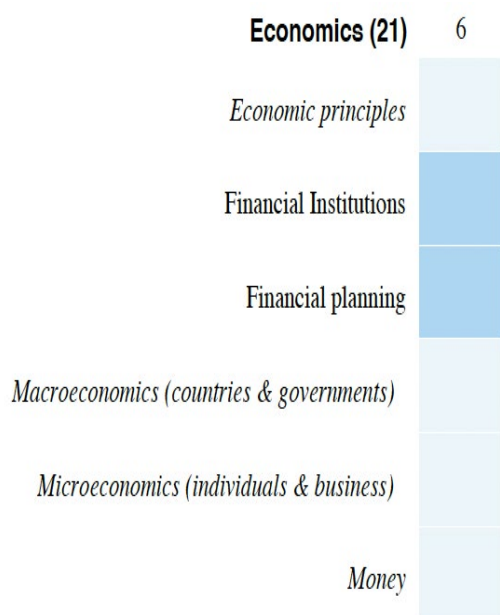
Figure 30. Heat map analysis of the Economics knowledge domain in Grade 6.

Global Literature   6

	6
African Literature & Mythology	
Australia, New Zealand, & Oceania Literature	
Canadian Literature	
Caribbean Literature	
Chinese Literature & Mythology	
Egyptian Mythology & Literature	
French Literature	
German & Central European Literature	
Greek & Roman Literature & Mythology	
Indian Literature & Mythology	
Italian Literature	
Japanese & Korean Literature & Mythology	
Mexican Literature & Indigenous Mythology	
Middle Eastern Literature & Mythology	
Russian & Eastern European Literature	
Scandinavian Literature & Mythology	
South American Literature & Indigenous Mythology	
Southeast Asian Literature	
Spanish & Portuguese Literature	

Figure 31. Heat map analysis of the Global Literature knowledge domain in Grade 6.

Philosophy Proper   6

	6
Aesthetics (21)	
Classical Philosophy	
Eastern philosophy (21)	
Epistemology (Knowledge)	
Ethics & Morality	
Literary Theory	
Metaphysics (Nonphysical Reality)	
Western philosophy	
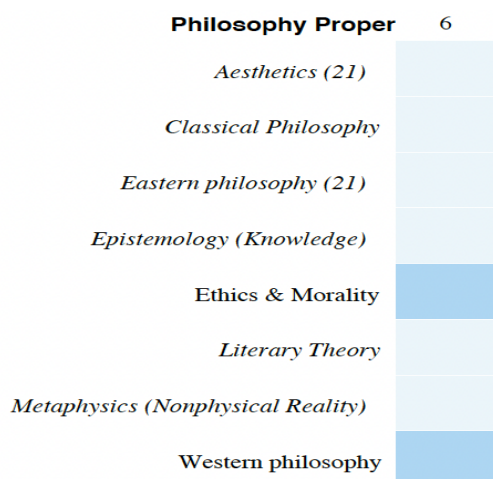
Figure 32. Heat map analysis of the Philosophy Proper knowledge domain in Grade 6.

Physical Sciences   6

	6
Astronomy	
Chemistry	
Physics	
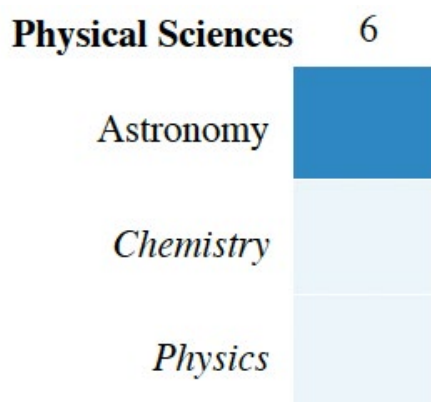
Figure 33. Heat map analysis of the Physical Sciences knowledge domain in Grade 6.
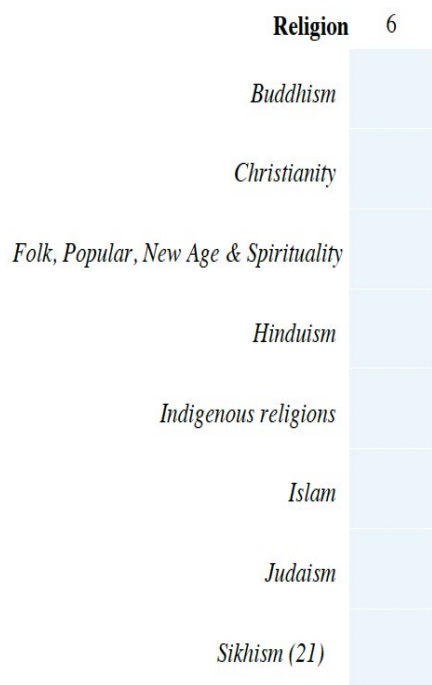
Figure 34. Heat map analysis of the Religion knowledge domain in Grade 6.
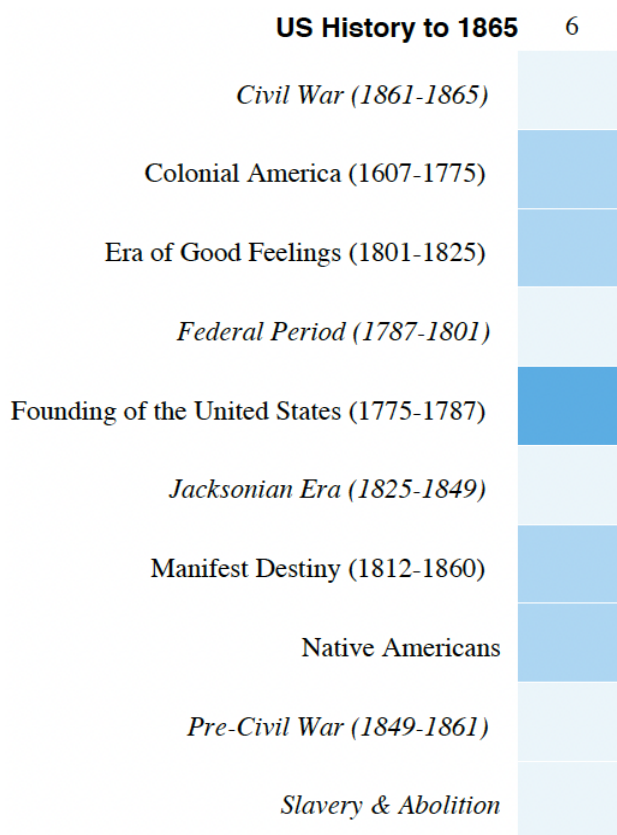
Figure 35. Heat map analysis of the US History to 1865 knowledge domain in Grade 6.

HMH INTO READING QUALITY AND COHERENCE

As mentioned previously, the Institute's analysis includes tagging each text for the knowledge domains, topics, and subtopics that it reinforces. The evaluation also rates each individual text for quality according to the rubrics below. Additionally, the Institute applies a Coherency Score to score how well the materials within a unit reinforce the knowledge build, described in more detail below.

Quality and coherence findings vary and are not linked to each other. For example, a unit may score highly for overall quality but have a low Coherence Score in terms of how well the texts reinforce the knowledge builds. The converse is also possible, where a unit scoring low in overall quality may have moderate or strong reinforcement of unit topic.

Rubrics for Quality

The Institute applies three rubrics for text quality analysis – a fiction rubric, nonfiction rubric, and literary nonfiction rubric. All rubrics consider content knowledge and language. Rubrics for fiction and literary nonfiction (nonfiction material presented in a narrative format) include additional factors relevant to the genres, such as emotion and prominence. The nonfiction rubric omits these factors in favor of focusing on the source's accuracy and quality.

Fiction and Literary Nonfiction (Total of 15 possible Points)

Evocation of Emotion: The degree to which the text is memorable due to its impact upon the reader's affect. Works that may achieve high emotion scores include Shakespeare's *Romeo & Juliet* and Morrison's *The Bluest Eye*.

Language: The degree to which the text contains outstanding language and derives effect from several factors, including:

- Clarity (Hemingway's *Old Man & The Sea*, Austen's *Emma*)

- Appeal to the imagination (Tolkien's *Lord of the Rings*)

- Sophisticated capacity at multiple levels, including cultural, social, metaphorical, and/or theological (Chinua Achebe's *Things Fall Apart,* Dante's *Divine Comedy,* de Cervantes' *Don Quixote,* Toni Morrison's *The Bluest Eye*).

Timeless and Profound Questions: The degree to which a text addresses perpetual issues of the human condition, such as private or public ethics, obedience to the state, family allegiance, meaning, and purpose. Works that may achieve high scores on this metric include Sophocles' *Antigone* and Camus's *The Stranger*.

Content Knowledge: The degree to which text builds students' background knowledge about the world. Strong examples on this metric include Erdrich's *Birchbark House* for elementary students or Austen's *Pride & Prejudice* for secondary students.

Prominence: The degree to which a text is widely known. Several factors determine a text's prominence, including:

- Longevity: The degree to which the text has entered the American literary canon, meaning that the text remains widely read for at least fifty years since its publication (Steinbeck's *The Grapes of Wrath*, Thoreau's *Walden*).

- Current prominence: The degree to which the text is a contemporary classic, meaning that it appears widely in American schools in recent years (Cisneros's *Last House on Mango Street*, Satrapi's *Persepolis*).

- Awards: The degree to which the text has been recognized as outstanding by critics or through awards. Notable literary awards include the Nobel Prize in Literature, Booker Prize, John Newberry, Man Booker Award, [PEN/Faulkner Award for Fiction](#), Pulitzer Prize, the [Coretta Scott King](#) Awards, or [Pura Belpre Awards](#). More examples of critical literary acclaim appear [here](#).

- Accuracy & Source (literary nonfiction only): The verifiable factual basis for the information and the bias profile of the source.

Nonfiction (Total of 12 Possible Points)

Accuracy: The degree to which the text is empirically accurate.

Source Quality: The degree to which the text comes from a high-caliber source. The Institute

assigned an initial numerical value to news sources and added quality scores upon encountering new sources. (For relevant links, click here.)

Language: The degree to which the text is well written and presents its subject matter effectively.

Content Knowledge: The degree to which the text effectively builds background knowledge of the topic or subtopic at hand.

Coherence Analysis

The Knowledge Map™ project allows for a unit-level analysis of quality and coherence. The Institute begins its analysis with Heat Maps, which illustrate coverage by grade bands of crucial knowledge domains and topics. It then builds upon that analysis through a quality scoring system that reflects the review of each individual text, outlined in the above rubrics and averaged across the entire text set. Finally, the Institute generates *Unit Coherence Maps* that illustrate the extent to which the materials reinforce the knowledge built within that unit, measured through shared topical tags.

The *Unit Coherence Map* utilizes a spoke visual, where the unit's name appears in the central square and the surrounding squares represent the materials within that unit. The percent shown on each outer square represents the percentage of shared topics weighted against the total number of shared topics within a unit. This means the more a topic is shared within a unit, the higher the percentage for each text that includes that topic; likewise, less-shared topics within a unit will result in a lower percentage for each text. The proximity of each spoke to the central unit square visually represents this relationship. In addition, there is an overall unit Coherence Score in the upper right corner in blue. The Coherence Score averages the coherency percentages of all texts within a given unit but also includes a 0.5% penalty for each domain that is not shared in any texts.

HMH INTO READING QUALITY & COHERENCE FINDINGS: GRADES K-6

The quality and coherence findings for each grade level follow in the sections below. This report highlights the highest- and lowest-rated units for each grade and provides a discussion of knowledge reinforcement within those units. The Institute considers a unit or text high-quality if it scores 70% or above. A unit or text is acceptable as low as 60%. Any lower score indicates that a unit or text scored poorly overall. Because the Coherency Score is dependent on the number shared topics within a unit, a strong Coherency Score will vary from unit to unit.

Kindergarten

Highest-Quality Unit

Unit 9 is the highest-quality unit at this grade level, with an average text quality score of 66.67% within the Institute's acceptable range. Three texts, *In the Tall, Tall Grass*, *What am I? Where am I*, and *Why Living Things Needs Homes*, score below the Institute's acceptable range for quality as indicated by lighter shades of blue. This unit has a strong coherency in which most of the texts address the topics of Life and Living Things and Animals within the Science domain. The text with the lowest coherency score, noted as 27.3% in the square, is *Red Knit Cap Girl to the Rescue*. While this text

shared topics such as Geology and Earth Science and Relationship Skills with several other texts, it did not support the most common topics within the unit.
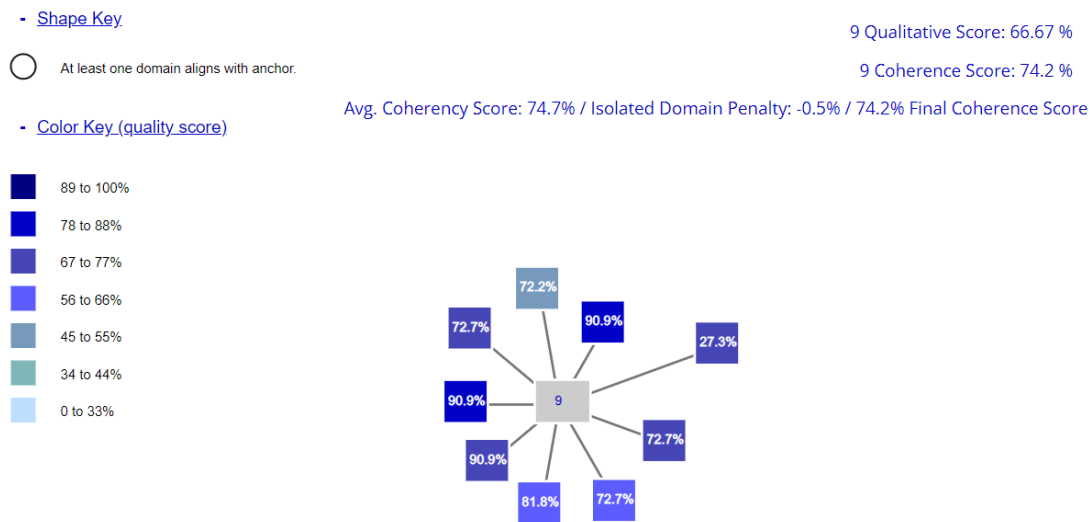
9 Qualitative Score: 66.67 %

9 Coherence Score: 74.2 %

Avg. Coherency Score: 74.7% / Isolated Domain Penalty: -0.5% / 74.2% Final Coherence Score

Figure 36. Coherence map of Grade K, Unit 9.

Lowest-Quality Unit

Unit 7 is the lowest-quality unit at this grade level, with an average text quality score of 65.04%, still within the Institute's acceptable range for high-quality materials. The coherence of this unit is weak. The most common topic, Animals, is shared by four of the nine texts within this unit. Other texts explore new topics within the Science domain, such as Insects and Life and Living Things. However, texts such as *Last Stop on Market Street* and *Not a Box* introduce entirely new domains and do not support any topics within the Science domain.

7 Qualitative Score: 65.04 %

7 Coherence Score: 28.9 %

Avg. Coherency Score: 30.9% / Isolated Domain Penalty: -2% / 28.9% Final Coherence Score
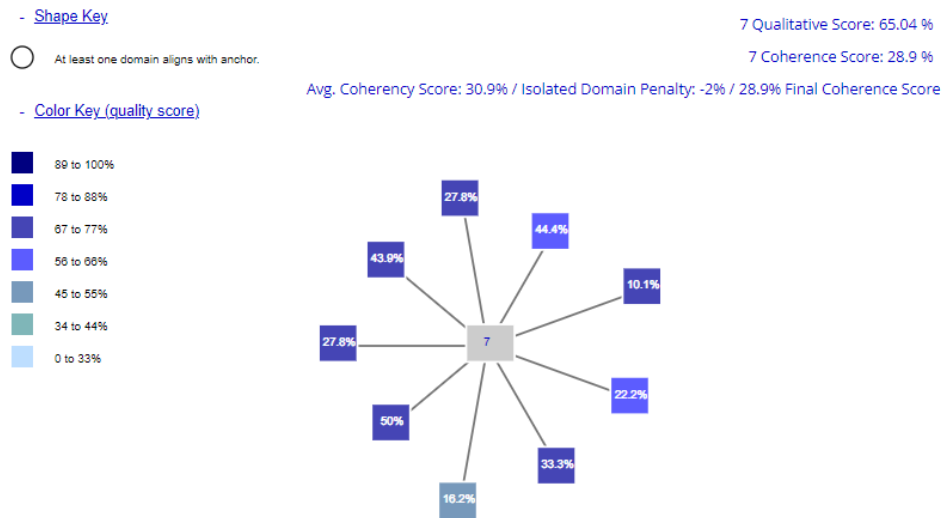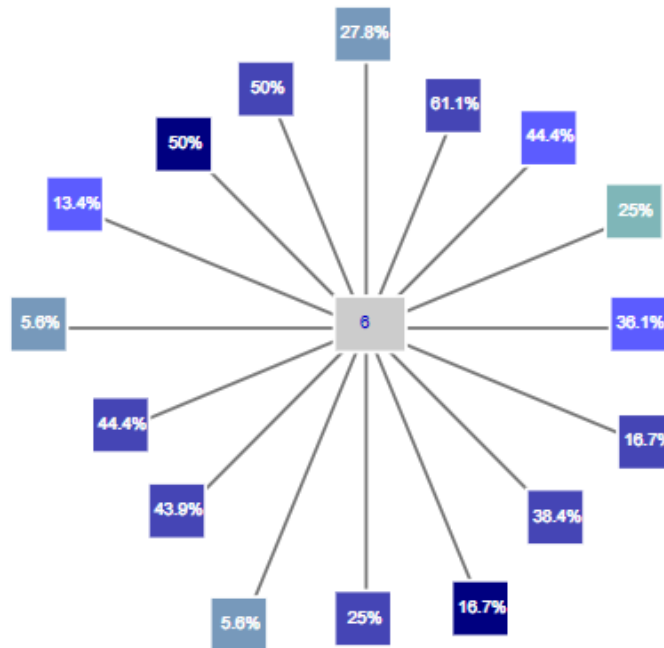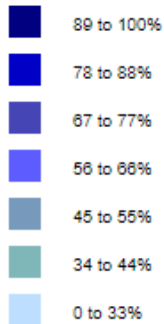

Figure 37. Coherence map of Grade K, Unit 7.

Grade 1

Highest-Quality Unit

Unit 8 is the highest-quality unit at this grade level, with an average text quality score of 82.83%, scoring well within the Institute's high-quality range. *Hansel and Gretel Two* and *A Tale of Two Mice* are the only texts that score below the acceptable range as indicated by the lighter blue shades. Much of the texts support the knowledge build of fables, folklore, and fairy tales from around the world, indicated by the shared topic of Global Literature of the Regional Literature domain. There are two materials, *Follow the Story Path* and *Make Stories Come Alive*, with a coherency rating of 4.1%. These texts introduce new domains and do not support the Global Literature domain.
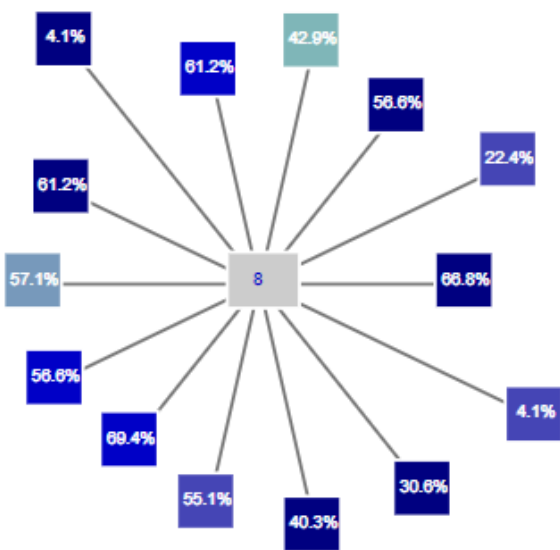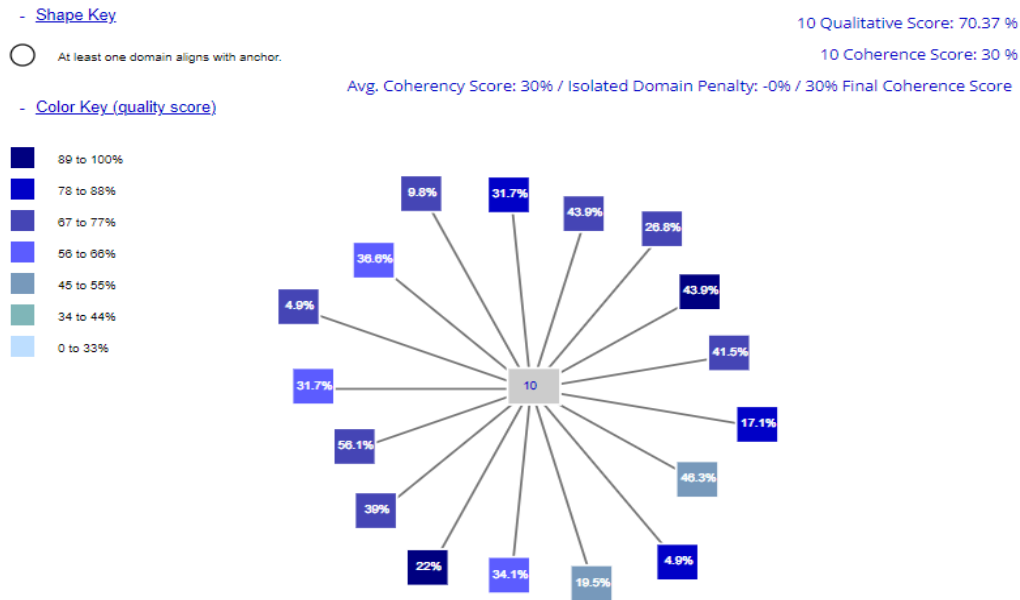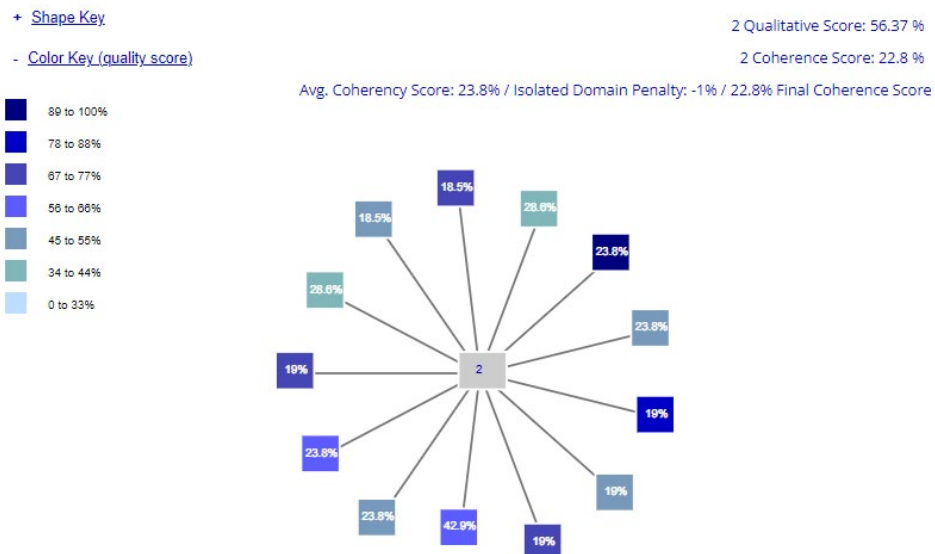

Figure 38. Coherence map of Grade 1, Unit 8.

Lowest-Quality Unit

Unit 6 is the lowest-quality unit at this grade level, with an average text quality score of 61.90%. While in the Institute's acceptable range, analysis for quality for the figure below indicates several texts' scores are not high-quality. Most of the texts enhance knowledge of American Ideals, Culture, & Tradition of the American History domain. Some texts do not support this topic at all and address a different domain like *The Plant Doctor* – thus the low coherency score of 5.6%.

○   At least one domain aligns with anchor.

Avg. Coherency Score: 31.6% / Isolated Domain Penalty: -1.5% / 30.1% Final Coherence Score

- Color Key (quality score)

■	89 to 100%
■	78 to 88%
■	67 to 77%
■	56 to 66%
■	45 to 55%
■	34 to 44%
■	0 to 33%

Figure 39. Coherence map of Grade 1, Unit 6.

Grade 2

Highest-Quality Unit

Unit 10 is the highest-quality unit at this grade level, with an average text quality score of 70.37%. Most of the texts enhance knowledge building of the World Cultures & Traditions or the Holiday topic of the Diversity, Equity, and Inclusion domain. Because the texts are split between the two topics, the coherency score is derived from both topics. In addition, some texts do not support either topic, like *Trombone Shorty*, and introduce new topics not shared by other texts.

10 Qualitative Score: 70.37 %

10 Coherence Score: 30 %

Avg. Coherency Score: 30% / Isolated Domain Penalty: -0% / 30% Final Coherence Score
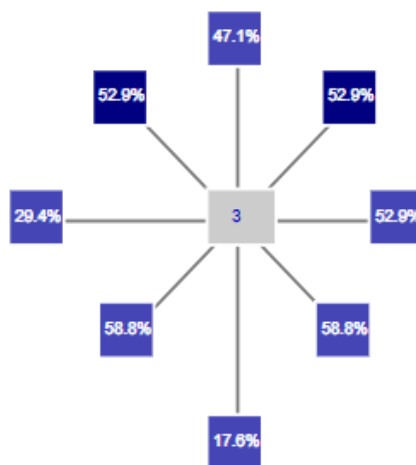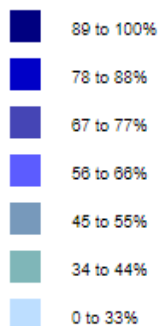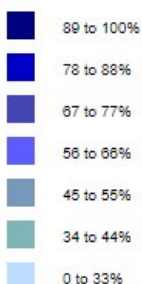
Figure 40. Coherence map of Grade 2, Unit 10.

Lowest-Quality Unit

Unit 2 is the lowest-quality unit at this grade level, with an average text quality score of 56.37%. For this unit, only three texts scored within the Institute's high-quality range, indicated by the darker shades of blue. There is no clear topical theme in this unit, leading to the lower coherency score. Several texts support the Chemistry topic of the Science domain, but other texts, like *The Important Book* or *If You Find a Rock,* explore the topics of Identity Development and Self-Awareness within the Social Emotional domain.

2 Qualitative Score: 56.37 %

2 Coherence Score: 22.8 %

Avg. Coherency Score: 23.8% / Isolated Domain Penalty: -1% / 22.8% Final Coherence Score

Figure 41. Coherence Map of Grade 2, Unit 2.

Grade 3

Highest-Quality Unit

Unit 3 is the highest-quality unit at this grade level, with an average text quality score of 77.78%. All of the texts within this unit score at or above the Institute's acceptable range. This unit has a strong coherency focusing on the topics of U.S. Symbols, Landmarks & Monuments, and American Ideals, Culture, & Tradition. *Why We Celebrate the Fourth of July* has the lowest coherency rating of 17.6%. While this text does stay within the American History domain, the topical coverage focuses on the American Revolution & Founding of United States.

- Shape Key

◯ At least one domain aligns with anchor.

3 Qualitative Score: 77.78 %

3 Coherence Score: 46.3 %

Avg. Coherency Score: 46.3% / Isolated Domain Penalty: -0% / 46.3% Final Coherence Score

- Color Key (quality score)

|	
■	89 to 100%
■	78 to 88%
■	67 to 77%
■	56 to 66%
■	45 to 55%
■	34 to 44%
■	0 to 33%

Figure 42. Coherence map of Grade 3, Unit 3.

Lowest-Quality Unit

Unit 8 is the lowest-quality unit at this grade level, with an average text quality score of 66.67%. Only one text has a score below the Institute's acceptable range for quality. The higher coherency score of 63.4% indicates a strong knowledge build. All of the texts support the Technology and Invention topic of the Science domain and some introduce other topics such as Industrialization & Reform from the American History domain.
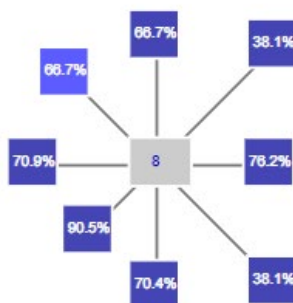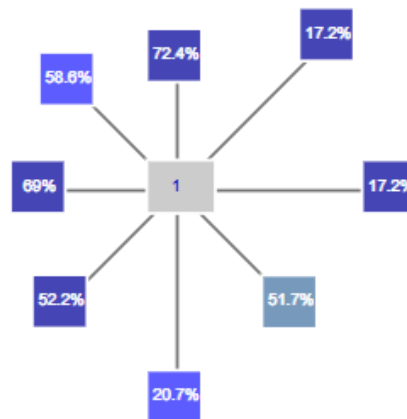
Figure 43. Coherence map of Grade 3, Unit 3.

Grade 4

Highest-Quality Unit

Unit 9 is the highest-quality unit at this grade level, with an average text quality score of 75.97%. Unit 9 has a moderate coherency score, as demonstrated visually below. The texts support the topics of Taking Care of the Earth in the Science domain and Community Helpers in the Communities domain. There are several topics introduced by only one text and not shared by others which impact the overall coherence scores. For example, *The Eco Guardians* supports the Animals topic of the Science domain, but no other texts do.
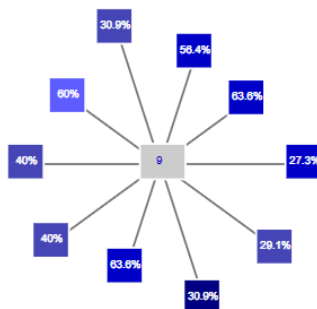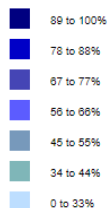
Figure 44. Coherence map of Grade 4, Unit 9.

Lowest-Quality Unit

Unit 1 is the lowest-quality unit at this grade level, with an average text quality score of 64.76%. Most of the texts work together to enhance learning of the Social-Emotion domain, addressing topics like Emotions, Relationship Skills, and Conflict Resolution. However, some of the supplemental material, including *The Story of You,* support fewer topics in that domain, leading to a lower coherency score overall.
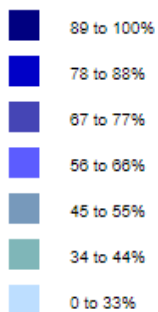

Figure 45. Coherence map of Grade 4, Unit 1.
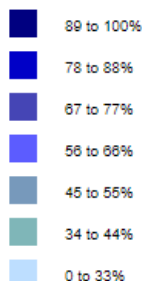
Grade 5

Highest-Quality Unit

Unit 10 is the highest-quality unit at this grade level, with an average text quality score of 78.95%. The darker shades of blue in the figure below reveal that all present texts meet the Institute's acceptable range for quality. While two of the unit's supplemental materials do not support the knowledge build of Animals in the Science domain - thus the 15.4% coherency rating - the remaining seven texts do so. These two outliers support the Writing about Writing topic of the Concepts & Language domain. Both the high text quality and general coherence of this unit contribute to a strong knowledge build overall.

- Shape Key

○ At least one domain aligns with anchor.

- Color Key (quality score)

■ 89 to 100%
■ 78 to 88%
■ 67 to 77%
■ 56 to 66%
■ 45 to 55%
■ 34 to 44%
■ 0 to 33%

10 Qualitative Score: 78.95 %

10 Coherence Score: 59 %

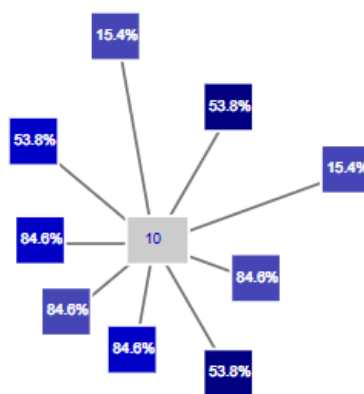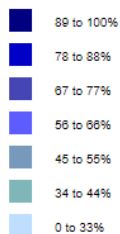Avg. Coherency Score: 59% / Isolated Domain Penalty: -0% / 59% Final Coherence Score

Figure 46. Coherence map of Grade 5, Unit 10.

Lowest-Quality Unit

Unit 2 is the lowest-quality unit at this grade level, with an average text quality score of 68.15%. The texts within this unit explore the Characteristics of Genres within the Regional Literature domain. One of the supplemental materials, noted with the lower coherency score of 14.3%, does not enhance student knowledge on Characteristics of Genres; however, it does support a knowledge build for writing a fictional story within the Concepts & Language domain.

+ Shape Key

- Color Key (quality score)

■ 89 to 100%
■ 78 to 88%
■ 67 to 77%
■ 56 to 66%
■ 45 to 55%
■ 34 to 44%
■ 0 to 33%

2 Qualitative Score: 68.15 %

2 Coherence Score: 46.1 %

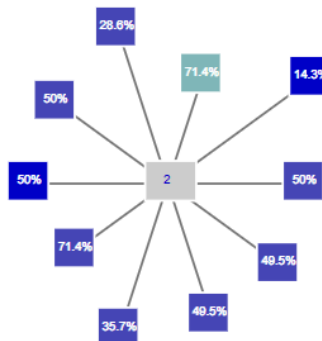Avg. Coherency Score: 47.1% / Isolated Domain Penalty: -1% / 46.1% Final Coherence Score

Figure 47. Coherence map of Grade 5, Unit 3.

Grade 6

Highest-Quality Unit

Unit 4 is the highest-quality unit at this grade level, with an average text quality score of 85.83%. Seven of the nine evaluated texts support the topic of the Great Depression in American History, leading to a considerable knowledge build throughout the unit. To provide a more robust understanding, other topics such as the African American Experience and Individuals Experiencing Homelessness of the Diversity, Equity, and Inclusion domain are targeted as well.
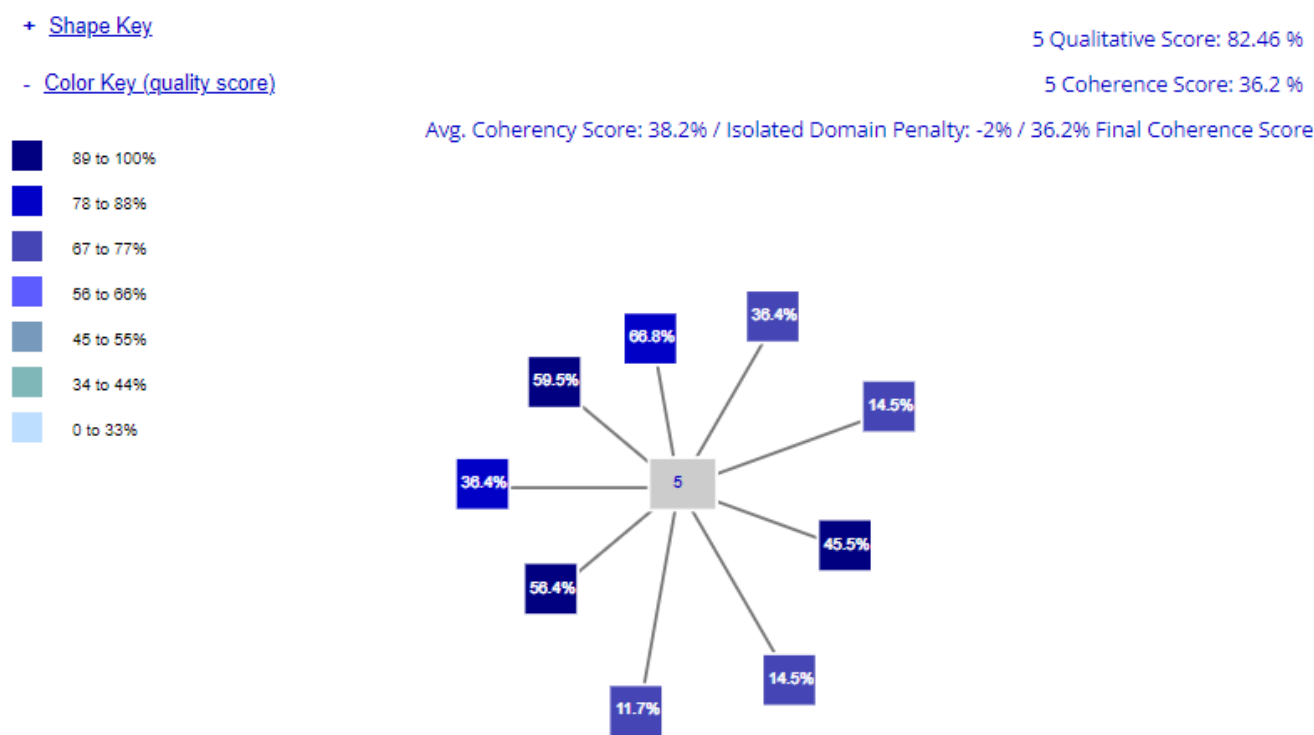

Figure 48. Coherence map of Grade 6, Unit 4.
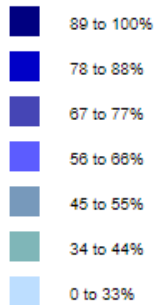
Lowest-Quality Unit

Unit 1 is the lowest-quality unit at this grade level, with an average text quality score of 65.77%. While most of the texts explore the topic of the African American Experience of the Diversity, Equity, and Inclusion domain, there are a couple texts, such as *The Dawn Wall* and *Meet the Climbers Who Made Yosemite's Toughest Ascent*, that do not, leading to a slight detraction from the unit's overall coherence.

- Shape Key

◯ At least one domain aligns with anchor.

- Color Key (quality score)

■	89 to 100%
■	78 to 88%
■	67 to 77%
■	56 to 66%
■	45 to 55%
■	34 to 44%
■	0 to 33%

1 Qualitative Score: 65.77 %

1 Coherence Score: 44.6 %

Avg. Coherency Score: 46.1% / Isolated Domain Penalty: -1.5% / 44.6% Final Coherence Score
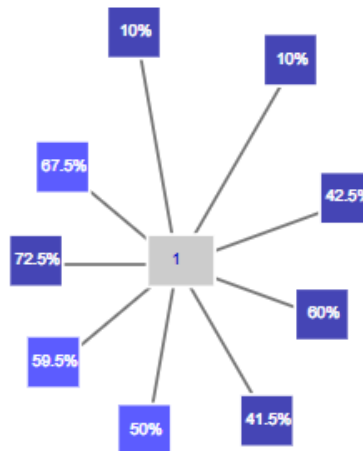
Figure 49. Coherence map of Grade 6, Unit 1.

HMH INTO READING QUALITY ASSESSMENT

Overall, texts within the Into Reading curriculum are generally high quality, revealing that students accessing the curriculum are consistently reading well-written materials. The table below reveals the highest and lowest unit quality scores for each grade level, as well as the difference between those two scores. Grades 1 and 6 present the largest difference in quality, with a twenty-percent range between the two scores. Grades 2, 3, 4 and 5, meanwhile, show moderate differences. Grades with high differences between unit quality score risk a level of inconsistency in their instruction, and lower-quality units in these grade levels should be reevaluated to ensure that students are learning from meaningful materials across the entire grade.

Grade	Overall Quality Score	Unit High Quality Score	Unit Low Quality Score	Difference (High-Low)
K	65.94%	68.94%	62.12%	6.8%
1	73.16%	82.83%	61.90%	20.9%
2	69.56%	70.37%	56.37%	14.0%
3	73.61%	77.78%	66.67%	11.1%
4	69.95%	75.97%	64.76%	11.2%
5	71.13%	78.95%	68.15%	10.8%
6	74.98%	85.83%	65.77%	20.1%

Figure 50. Summary of unit quality scores in Grades K-6.

LEARN MORE

This report is one of twelve ELA Knowledge Map™ reports released in Winter 2022 by the Johns Hopkins Institute for Education Policy. The release of these reports was accompanied by a Findings Summary, outlining the overarching themes across all ELA curricula analyzed. View the other ELA Knowledge Map™ reports and learn more about the importance of high-quality curriculum at edpolicy.education.jhu.edu.

About the Institute

The Johns Hopkins University Institute for Education Policy is dedicated to integrating research, policy, and practice to achieve educational excellence for all of America's students. Specifically, we connect research to the policies and practices that will ensure all children have access to intellectually challenging curricula, highly-effective educators, and school models that meet students' diverse needs. By delivering the strongest evidence to the policymakers who set the course and the practitioners who teach and lead, we hope to serve the American children who enter our classrooms every day.

About HMH

HMH brings learning to countless students, teachers, and readers—transforming lives, supporting communities, and making our society more open, just, and inclusive for all, one story at a time. _HMH Into Reading_ is differentiated by design to offer research-based literacy instruction, support teachers in developing a culture of learning and growth, and help all learners believe in the power of "I can."

[i] Reid Smith et al., "The Role of Background Knowledge in Reading Comprehension: A Critical Review," *Reading Psychology* 42, no. 3 (April 3, 2021): 214–40). Sonia Q. Cabell and Hyejin Hwang, "Building Content Knowledge to Boost Comprehension in the Primary Grades," *Reading Research Quarterly* 55, no. S1 (2020): S99–107, https://ila.onlinelibrary.wiley.com/doi/full/10.1002/rrq.338 and also Kathryn S. McCarthy and Danielle S. McNamara, "The Multidimensional Knowledge in Text Comprehension Framework," *Educational Psychologist* 56, no. 3 (July 3, 2021): 196–214, https://doi.org/10.1080/00461520.2021.1872379).

[ii] "Standards aligned" generally refers to the Common Core State Standards.

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