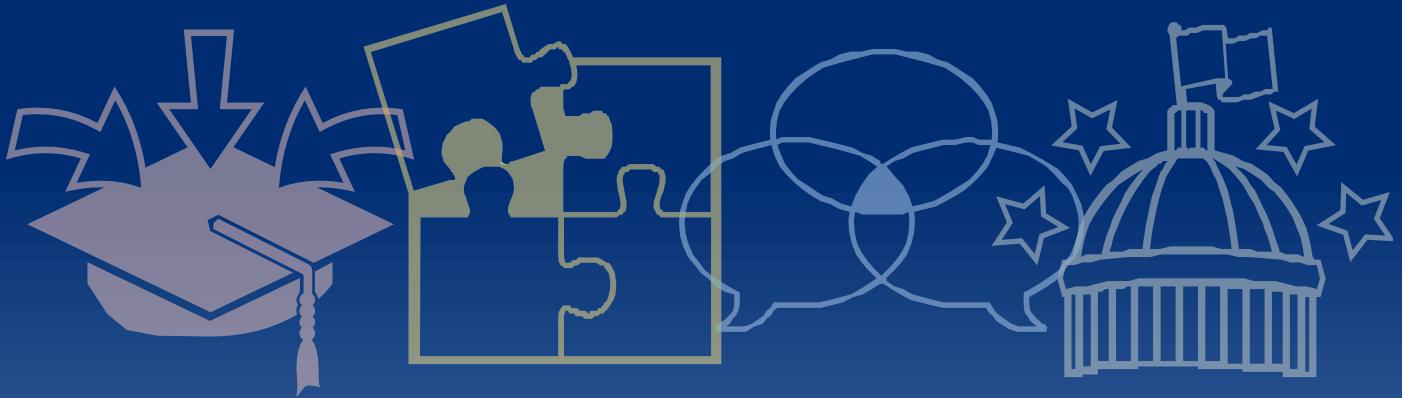




JOHNS HOPKINS  
SCHOOL of EDUCATION

Institute for Education Policy



# Social Studies Knowledge Map<sup>TM</sup>

iCIVICS

*A unique analytic resource enabling  
policymakers, school leaders, and parents to  
better understand the strengths and weaknesses  
of the iCivics single-grade civics course.*

Summer 2021



The Johns Hopkins Institute for Education Policy designed the Knowledge Map™ as a unique analysis of the knowledge build provided by different curricula. Why? The academic achievement gap between low- and high-income students is, in large part, a knowledge gap. Research indicates that many pluralistic democracies require all schools to teach a standard body of knowledge;<sup>i</sup> a comprehensive, content-rich curriculum is a signature feature of high-performing systems.<sup>ii</sup>

Despite the research record, a majority of the United States' curricula sideline the acquisition of deep content, and instead, focus on the process of honing abstract skills. Furthermore, we know from the political science literature that students need to practice the skill of civil disagreement<sup>iii</sup> - a routine that is unfortunately rare in the United States' classrooms.<sup>iv</sup> A well-designed social studies curriculum can encourage both knowledge building and the habit of civil disagreement.

The Institute's Social Studies Knowledge Map™ allows us to analyze a K-12 social studies curriculum in terms of the knowledge it helps students learn and apply. We conduct this analysis by "mapping" the knowledge domains that are implicit in the selection of the sources and texts that are discussed. This mapping enables policymakers to see not only the domains of knowledge that are opened up in the curriculum – and others that are missed – but also to what degree, and over what grade span. We also assess whether a given unit includes more than one perspective, and whether the teacher-facing materials encourage deliberation and disagreement. This is a one-of-a-kind instrument.

## 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.
- The Institute evaluates each unit for its presentation of distinctive viewpoints and for the presence of teacher-facing instructions that support a deliberative classroom (referred to as 'Open Classroom Climate').
- [View a sample report of a de-identified district's K-12 curriculum.](#)

## PROJECT DESCRIPTION

The Institute reviewed the materials that comprise the iCivics single-grade civics course and evaluated it as a lower secondary education course. Each resource, both text and non-text, was evaluated individually, in the context of its unit, and in the cumulative curriculum's knowledge reinforcement capabilities.

Insights discussed throughout this report derive from several evaluations, including heat maps, coherence and quality maps, and evaluations of grade-specific metrics such as the presence of multiple viewpoints and the encouragement of deliberation.

### Strengths of Curriculum

Heat map analysis performed on this course indicates that the materials contribute to well-developed knowledge building in the civics discipline. Of the knowledge domains evaluated, the Institute's Civics & Government domain was by far the strongest in the course, which aligns with the scope and goals presented by iCivics. Well-developed coverage across a variety of topics within the domain indicates that the system successfully reinforces its civics instruction, which suggests that the course is meeting its goals.

Additionally, the units within the course generally perform well on the coherence metric. Individual coherence scores for units tend to fall within the moderate to strong range, indicating that good knowledge reinforcement occurs across multiple topics of study. Specific units' main ideas and themes typically appear throughout the unit, meaning that students of the iCivics course have access to resources that develop their understanding of certain topics.

Finally, the course presented strong results on the Open Classroom Climate and Multiple Perspectives metric. The Institute rated the course's teaching materials for how well they offered various viewpoints on the same topic, as well as on how well the course encourages student discussion and debate. The iCivics course achieved high scores on both, indicating that it successfully encourages students to utilize their own critical thinking skills as they learn. This is a high-quality curriculum.

### Weaknesses of Curriculum

Although the overall average quality of the course is acceptable, text quality varies considerably from unit to unit, and several units rate below the Institute's standards for quality. The course presents a considerable difference between its highest-quality and lowest-quality scores, which suggests a level of inconsistency in the standard of instruction. Large quality differences indicate that some topics are more meaningfully developed than others, and the appearance of this trend here means that the iCivics course risks a dip in effectiveness regarding certain aspects of its teachings.

## INSTITUTE RECOMMENDATIONS

Overall, the iCivics scope and sequence for a full-year, single-grade civics course is very strong. Its use of a wide range of materials is likely to engage students in meaningful and interactive activities; to create space for lively classroom discussions; and to explore multiple perspectives. On the other hand, the “basic overviews” designed to provide contextual background information are of variable quality. Bringing *uniformly* high-quality resources to each unit would support the important interactive and experiential content and activities. The result would be a truly exceptional civics curriculum.

- Identify introductory or weak texts that have lower-quality scores, and replace them with opportunities for a stronger knowledge build.
- Incorporate more primary-source documents throughout each unit and rely more on primary sources as foundations of knowledge, not merely as opportunities for discussion and exploration of multiple perspectives.
- Seek to tie the existing civics content to broader themes of political theory, philosophy, and sociology where appropriate, as a means of situating U.S. civics in a global and historical context.

## iCIVICS KNOWLEDGE/HEAT MAPS: SINGLE-GRADE CIVICS COURSE

One of the Institute’s critical gateway questions addresses the level of exposure students receive to each important domain of knowledge and to the topic 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 eleven topical domains in Grades K-5 appear in the figures 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 is age-dependent; a topic is tagged if the average elementary student could speak about it for thirty seconds, a middle school student for one minute, and a high school student for two minutes.

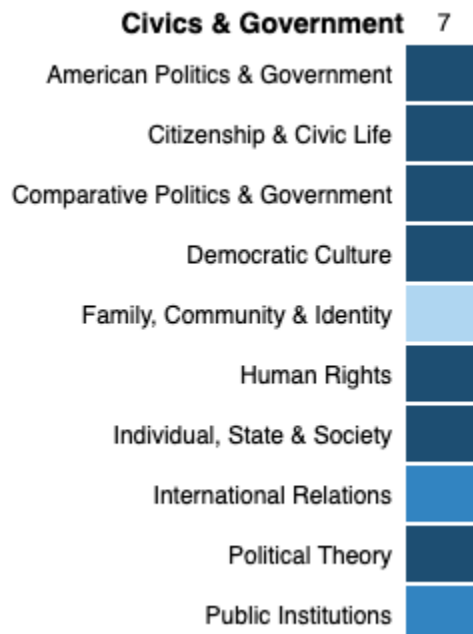
No Text   1 Text   2-4 Texts   5-7 Texts   8+ Texts

*Figure 1. The color-coded rating scheme used in heat maps, where lighter blue indicates fewer texts and darker blue indicates more 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).

Within the iCivics course, one knowledge domain rates strongly for overall knowledge building. Fittingly, this is the Civics & Government domain, seen below in Figure 2. The course's coverage of this domain includes a wide variety of texts covering a multitude of topics, indicating that the course contributes to well-rounded and deep instruction at that level. Though heat map analysis reveals additional strengths in specific topics within the course, the Civics & Government domain provides the best example of a fully developed knowledge build within a curriculum.



*Figure 2. Heat map analysis of the **Civics & Government** knowledge domain in the iCivics civics course.*

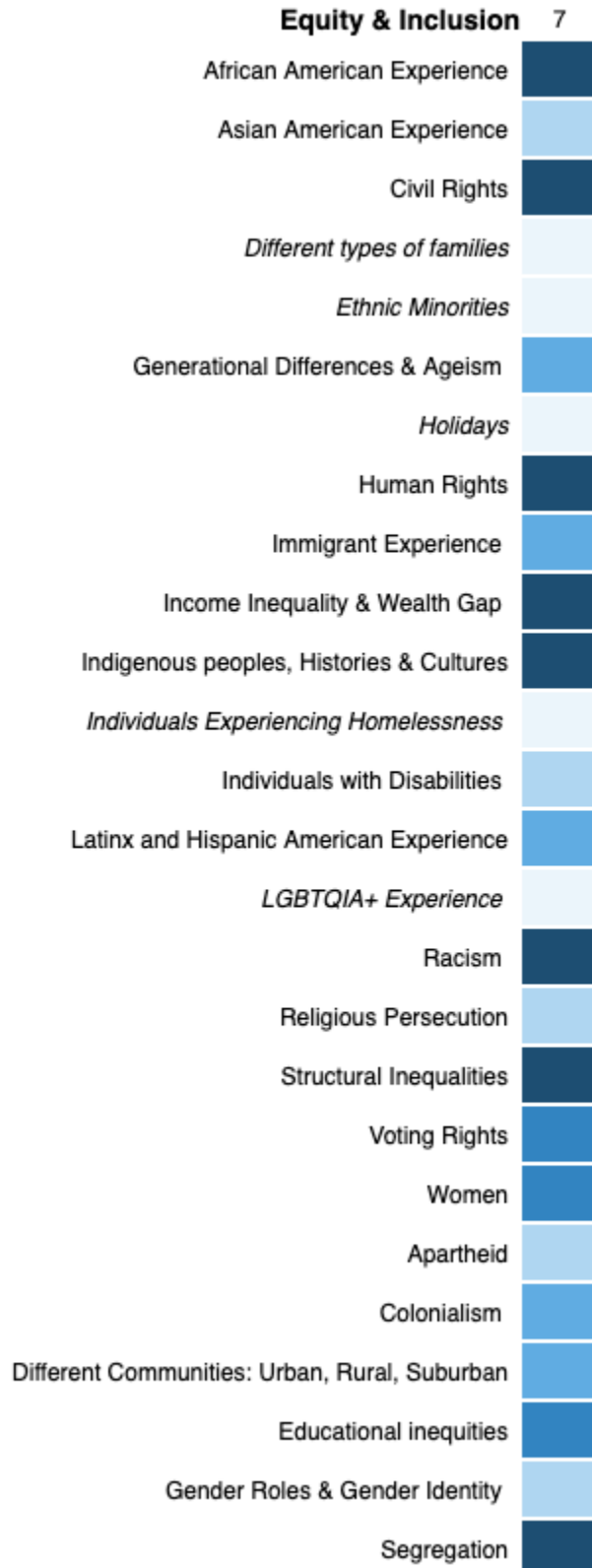


Figure 3. Heat map analysis of the **Equity & Inclusion** knowledge domain in the iCivics civics course.

## 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).

Within the iCivics course, five knowledge domains scored moderately for coverage:

- Classical History
- Economics
- Media
- U.S. History Since 1865
- U.S. History To 1865

These domains often achieved significant topical coverage but did not expand this knowledge building across the entire domain as the Civics & Government domain did. Though absences in certain topics can be attributed to the specialized nature of the iCivics course, certain gaps may be worth examining to determine whether or not additional development is required.



Figure 4. Heat map analysis of the **Classical History** knowledge domain in the iCivics civics course.

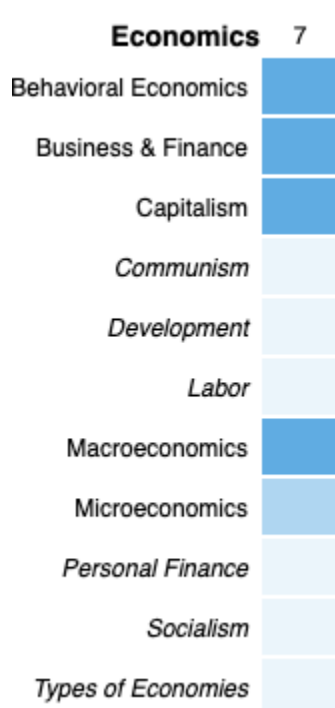


Figure 5. Heat map analysis of the **Economics** knowledge domain in the iCivics civics course.

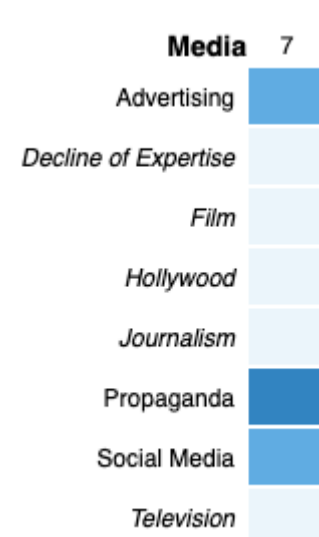


Figure 6. Heat map analysis of the **Media** knowledge domain in the iCivics civics course.



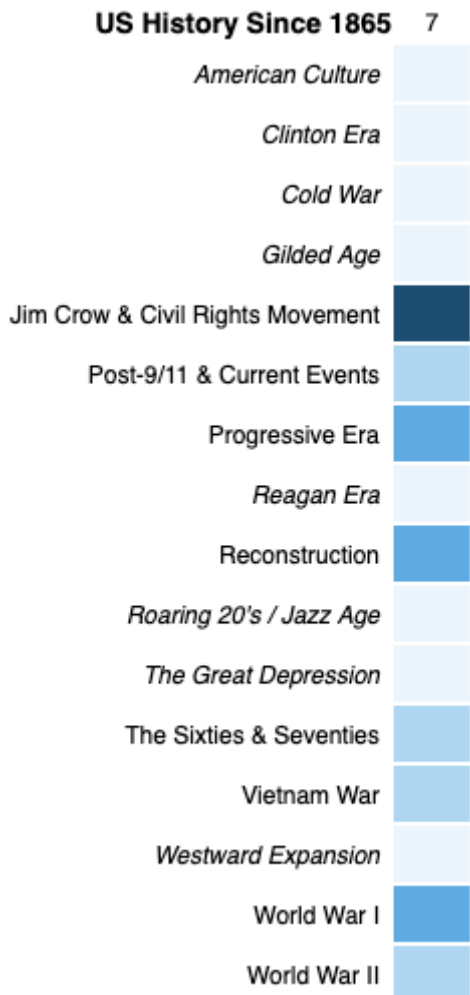


Figure 7. Heat map analysis of the **U.S. History Since 1865** knowledge domain in the iCivics civics course.

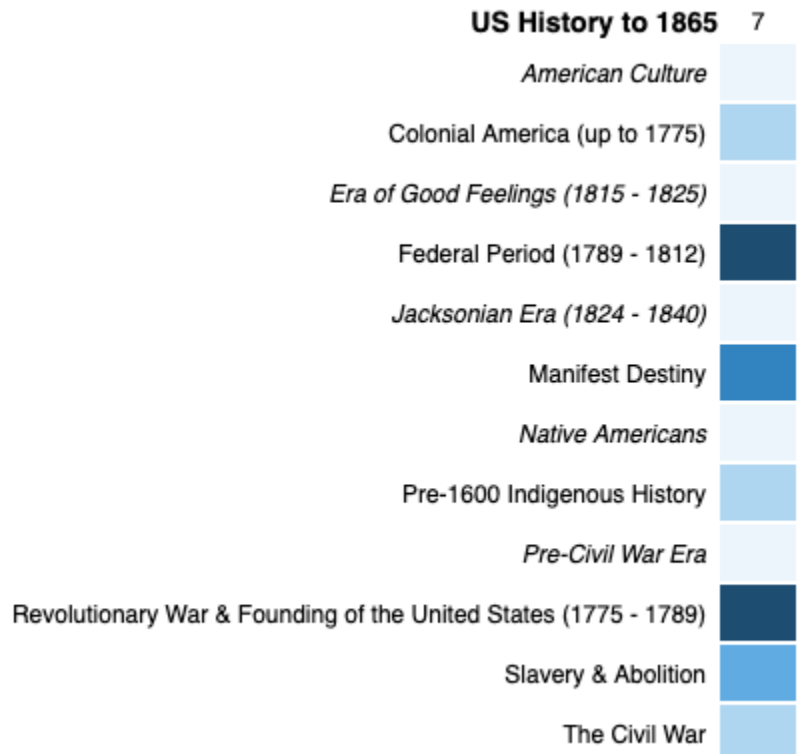


Figure 8. Heat map analysis of the **U.S. History to 1865** knowledge domain in the iCivics civics course.

## Additional Knowledge Domains

Thirteen knowledge domains received either zero or very thin coverage: African History, Ancient Civilizations, Anthropology, Asian History, European History, Geography, Law & Criminology, Mesoamerican, South American, & Caribbean History, Philosophy, Psychology, Religion, Sociology, and Thematic World History. The Institute attributes this to the appropriately narrow scope of a one-year Civics course.

## iCIVICS QUALITY & 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 rubric below. For each item, the Institute applies a tagging system that rates how well supplemental materials reinforce the knowledge found in the anchor text.

The quality and coherence review also includes an evaluation that measures the presence or absence of two factors: multiple perspectives on a given subject and encouragement to create a deliberative classroom.

Quality and coherence findings vary and are not linked to each other. A unit may score highly on overall quality, shown as a percentage, but have a low coherence rating in terms of how well the supplemental texts reinforce the knowledge built in the anchor text. In other words, units with high overall quality scores may only weakly reinforce central themes through the inclusion of additional materials, and vice versa.

### Rubrics for Quality

The Institute applies three rubrics for analysis of individual text quality – a rubric for written primary sources, visual primary sources, and all secondary sources.

#### Primary Sources: Written, Spoken, and Verbal

- **Emotion:** The degree to which the source is memorable due to its impact upon the reader.
- **Language:** The degree to which the source is an example of outstanding or representative writing.
- **Universal Questions:** The degree to which the source addresses important aspects of the human condition or the relevant historical context.
- **Content Knowledge:** The degree to which the source contributes to students’ background knowledge of the tagged domains and topics.
- **Prominence:** The degree to which the source reflects its historical period or provides important context to the related events or documents.

#### Primary Sources: Visual, Artistic, or Non-Verbal

- **Emotion:** The degree to which the source is memorable due to its impact upon the reader.
- **Authenticity:** The degree to which the source reflects authentic interpretive experience or visual representation of the historical context.
- **Universal Questions:** The degree to which the source addresses important aspects of the human condition or the relevant historical context.
- **Content Knowledge:** The degree to which the source contributes to students’ background knowledge about the tagged domains and topics.

- **Prominence:** The degree to which the source reflects its historical period or provides important context to the related events or documents.

## Secondary Sources: Written, Spoken, and Visual

- **Accuracy:** The degree to which the source is empirically accurate.
- **Language/Artistic Technique:** The degree to which the source is an example of outstanding writing or artistic expression.
- **Source:** The quality and trustworthiness of the source.
- **Content Knowledge:** The degree to which the source contributes to students' background knowledge about the tagged domains and topics.

The quality and coherence review also includes an evaluation that measures the presence or absence of two factors: multiple perspectives on a given subject and encouragement to create a deliberative classroom.

## Unit Quality and 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 coherence graphs that illustrate the extent to which the supplemental materials reinforce the knowledge built by the anchor text (as measured through assigned topic tags). For most units in a social studies curriculum, the textbook is the anchor text. In units or grades lacking a textbook or other predefined anchor text, the highest-quality text serves as the anchor.

The coherence graph utilizes a ball-and-spoke visual, where the central ball represents the anchor and the surrounding balls represent the supporting materials. The numbers shown on each ball represent the number of topics in each supplemental material that correlate to the topics assigned to the anchor. The anchor always reinforces itself entirely; as such, the number on the central ball always equates to the total number of tags. The proximity of each spoke to the central ball visually conveys this relationship.

The quality and coherence findings for each grade level follow in the sections below. This report highlights the highest- and lowest-quality units for each grade, and provides a discussion of knowledge reinforcement within those units. The caption below each graph provides an overall quality score for the unit. The Institute considers units with a text quality score of 75% or above to be high quality. A unit is acceptable as low as 66%, and any quality score below 66% denotes poor quality. The caption contains additional information about each graphic, including the grade level and unit number represented. In the graphic itself, the anchor text rating appears in the center, while individual supplemental text ratings appear on the nodes.

# iCIVICS QUALITY & COHERENCE FINDINGS: SINGLE-GRADE CIVICS COURSE

## Overall Quality Score

The course receives an overall quality score of 68.89%, placing it in the acceptable quality band. This score was taken by averaging the individual quality scores given to each unit, which in turn were determined by the performance of individual texts within those units.

## Highest-Rated Unit

Unit 6 is the highest-performing unit in the course, with an average text quality score of 80.89%. This score was taken by averaging the individual quality scores of materials within the unit.

### - [Shape Key](#)

- No topics align with anchor.
- At least one topic 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%

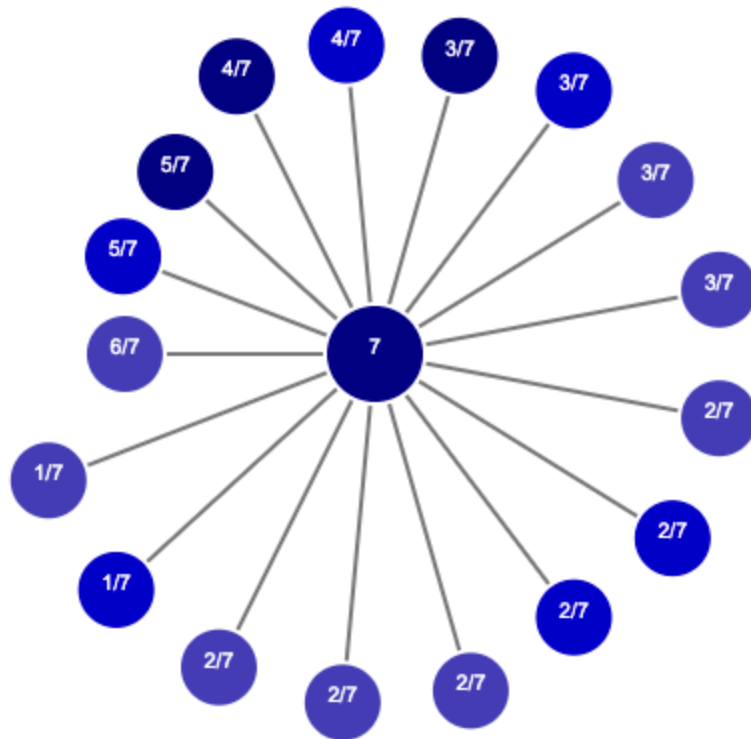


Figure 9. Coherence map of the iCivics civics course, Unit 6, Photographs from the Jim Crow Era and related texts. Supporting materials moderately reinforce the anchor. The average unit score for text quality is 80.89%.

The Institute’s coherence analysis indicates moderate reinforcement between the anchor and its supplementary materials. All three of the anchor’s topic tags appear throughout the unit, revealing that they are all built upon by multiple resources.

However, two materials do not share any of the anchor’s topic tags, indicating that these materials in particular do not contribute to the knowledge build at this level. With its high text quality and solid groundwork on the coherence metric, this unit provides a good basis for further development, both within the unit itself and across the entire course.

## Lowest-Rated Unit

Unit 17 is the lowest-quality unit at this grade level, with an average text quality score of 58.33%. The Institute’s analysis for coherence indicates strong knowledge reinforcement, as seen in the figure below. When evaluated with different materials as the anchor, the unit generally presents strong connections across the unit, indicating that the selected resources successfully link ideas and themes. Despite this high coherence rating, however, the average text quality falls below the Institute’s acceptable standards, and improvements at this level should prioritize identifying and replacing weaker resources.

### - Shape Key

- No topics align with anchor.
- At least one topic 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%

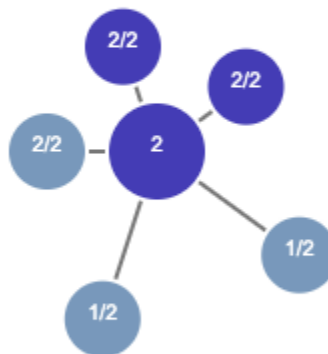


Figure 10. Coherence map of the iCivics civics course, Unit 17, Foreign Policy & Diplomacy and related texts. Supporting materials strongly reinforce the anchor. The average unit score for text quality is 58.33%.

# UNIT ANALYSIS OF OPEN CLASSROOM CLIMATE & MULTIPLE PERSPECTIVES

The Social Studies Knowledge Map™ also includes a unit-level assessment of the inclusion of multiple perspectives and the intended open classroom climate. The multiple perspectives score measures the extent to which the unit provides a holistic approach to its broader context by representing a range of voices and viewpoints.

The open classroom climate score analyzes teacher-facing materials to determine the extent to which instructors are encouraged to include discussion and student inquiries. It also evaluates whether appropriate space is left for students to form their own opinions on controversial or contested issues. The bar graphs below provide the scores for each unit, and include an average for the entire grade on both measures.

Scores in both categories range from 1 to 3; an average score of 2.5 or above is considered high, while a score between 2 and 2.5 is considered acceptable. The iCivics course open classroom climate average is 2.82 and the multiple perspectives average is 2.71.

As Figure 11 indicates, the iCivics course performs strongly on both of these metrics, with both averages falling within the highest-quality range. Most units achieved perfect scores on both metrics, and no unit scored a 1 on either metric. The Open Classroom Climate score slightly outperformed the Multiple Perspectives score, suggesting that the course does especially well at encouraging students to offer their own opinions. Overall, however, both scores are very high, which suggests the iCivics course prioritizes honing critical thinking skills in its students.

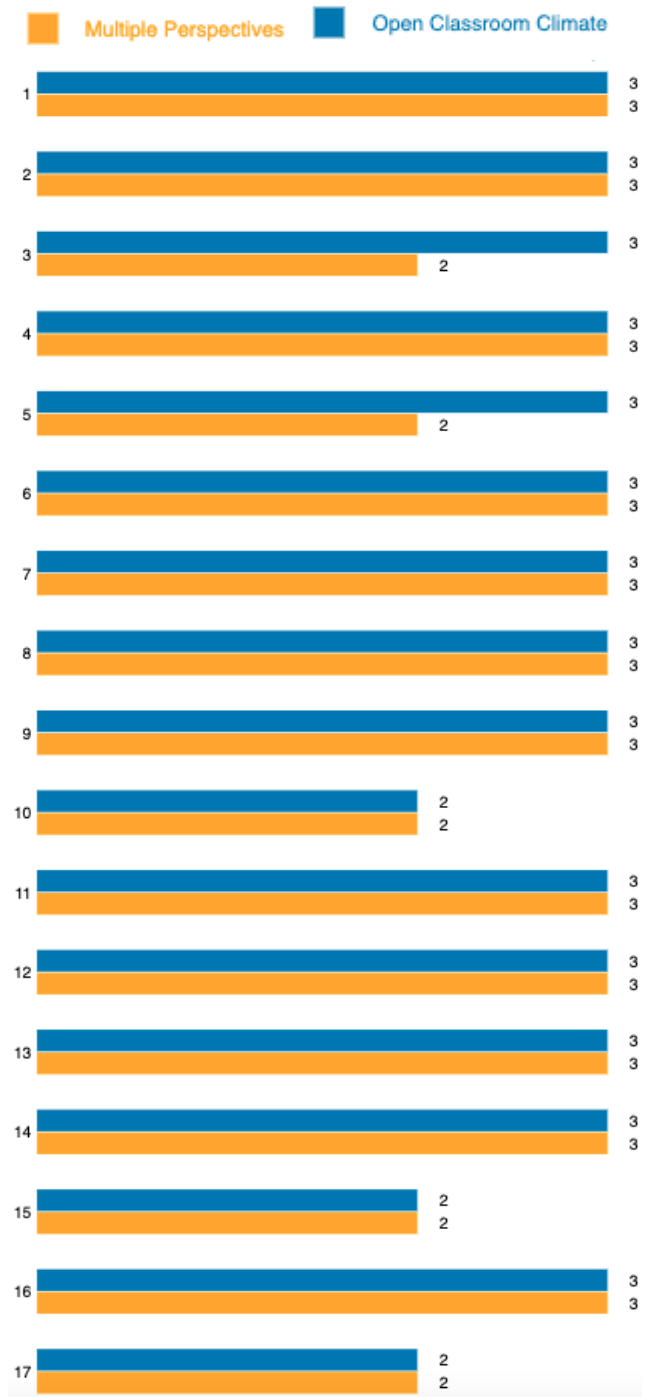


Figure 11. Visual representation of Multiple Perspectives and Open Classroom Climate scores in the iCivics civics course.

## LEARN MORE

This report is one of five Social Studies Knowledge Map reports released in Summer 2021 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 social studies curricula analyzed. View the other Social Studies Knowledge Map reports and learn more about the importance of high-quality curriculum at [edpolicy.education.jhu.edu](https://edpolicy.education.jhu.edu).

### About the Institute

The [Johns Hopkins University Institute for Education Policy](https://www.jhu.edu/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 iCivics

[iCivics](https://www.icivics.org/) champions equitable, non-partisan civic education so that the practice of democracy is learned by each new generation. Founded by Justice Sandra Day O'Connor in 2009, iCivics works to inspire life-long civic engagement by providing high-quality and engaging civics resources to teachers and students across the nation.

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<sup>i</sup> Ashley Berner, “Funding Schools,” in *Balancing Freedom, Autonomy, and Accountability in Education*, ed. Charles Glenn and Jan De Groof, vol. 1 (Tilburg: Wolf Legal Publishers, 2012), 115–29. E. D Hirsch, *The Knowledge Deficit: Closing the Shocking Education Gap for American Children* (Boston: Houghton Mifflin, 2016).

<sup>ii</sup> Common Core, “Why We’re behind: What Top Nations Teach Their Students but We Don’t.” (Washington, D.C.: Common Core, 2009). Amy von Heyking, “Alberta, Canada: How Curriculum and Assessments Work in a Plural School System” (Baltimore, MD: Johns Hopkins Institute for Education Policy, June 2019), <https://jscholarship.library.jhu.edu/bitstream/handle/1774.2/62962/alberta-brief.pdf?sequence=1&isAllowed=y>

<sup>iii</sup> David E Campbell, “Voice in the Classroom: How an Open Classroom Climate Fosters Political Engagement Among Adolescents,” *Political Behavior* 30, no. 4 (2008): 437–54.

<sup>iv</sup> Robert Kunzman, *Grappling with the Good: Talking about Religion and Morality in Public Schools* (Albany: State University of New York Press, 2006); Katherine G Simon, *Moral Questions in the Classroom: How to Get Kids to Think Deeply about Real Life and Their Schoolwork* (New Haven: Yale University Press, 2001).



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