



# How NCTQ scores the Middle School Content Standard

## [Standard and indicators](#)

### Data used to score this standard

Evaluation of middle school<sup>1</sup> teacher preparation programs on Standard 7: Middle School Content uses the following sources of data:

- State regulations that specify the types of middle school teacher certification available
- State documents that outline possible teaching assignments for teachers with each type of certification
- Course requirements and descriptions found in institution of higher education (IHE) catalogs
- Degree plans provided by IHEs
- Relevant IHE web pages, including web pages for the college of education and the registrar, and those relevant to graduate school admission
- Admissions-related documents, including transcript review forms

### Who analyzes the data

Two [general analysts](#) evaluate each program using a detailed scoring protocol from which this scoring methodology is abstracted. For information on the process by which scoring discrepancies are resolved, see the “scoring processes” section of the [General Methodology](#).

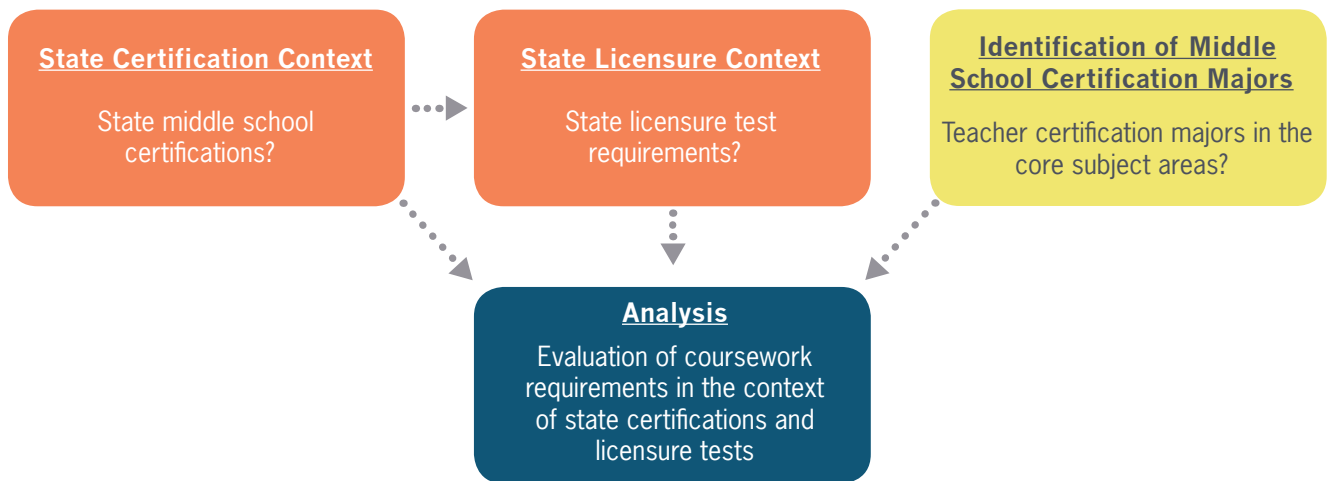
### Scope of analysis

Analysis starts with an examination of the middle school certifications offered in each state. Next, an evaluation of licensure test adequacy is completed for each certification. The majors leading to certification are then identified for each middle school program. Finally, if licensure tests are not adequate for a specific certification, analysts examine the coursework preparation required for specific middle school majors.<sup>2</sup>

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<sup>1</sup> For the purposes of this standard, middle school certification refers only to stand-alone degree programs that lead to certification in the middle school grade span. Certifications that encompass both the middle school and high school grade spans are evaluated under **Standard 8: High School Content**. Grade span information for each state can be found [here](#).

<sup>2</sup> This may involve analysis of course descriptions. More discussion of evaluation using coursework descriptions is found [here](#).



A detailed explanation of each step in this process follows. Because examples of coursework satisfying Indicators 7.2-7.6 are similar to the examples of coursework satisfying the High School Content Standard’s Indicators 8.2-8.5 (found at the conclusion of the [scoring methodology for Standard 8](#)), they are not repeated here. Examples of the types of coursework satisfying Indicator 7.7 are found at the conclusion of this scoring methodology.

### State certification context

There are several possible organizations of middle school certification, making it necessary to evaluate this standard within a state context. Evaluation begins by using state regulations to identify all single-subject certifications available to teach at the middle school level in the four core subject areas or “pathways”<sup>3</sup> of English, mathematics, the sciences and the social sciences.<sup>4</sup> Certifications that combine two of these pathways or all four (“generalist certification”) are treated as a fifth pathway for the purpose of this evaluation.

Types of Middle School Certification		
Single Subject	Dual Subject*	Generalist
English	English/Social Sciences	All Subjects
Social Sciences		
Mathematics	Mathematics/Sciences	
Sciences		

Evaluated under Indicators 7.2 – 7.5
  Collectively evaluated under Indicator 7.6

\* While some states and programs may allow for alternative pairings, these two combinations are the most common and are therefore used exclusively for analysis. A number of states require content preparation in two pathways but then allow candidates to pursue a lone single-subject certification. Similarly, some middle school programs require teacher candidates to pursue preparation in two subjects simultaneously even though the state offers only single-subject certifications. In both cases, we evaluate the preparation using dual-subject criteria.

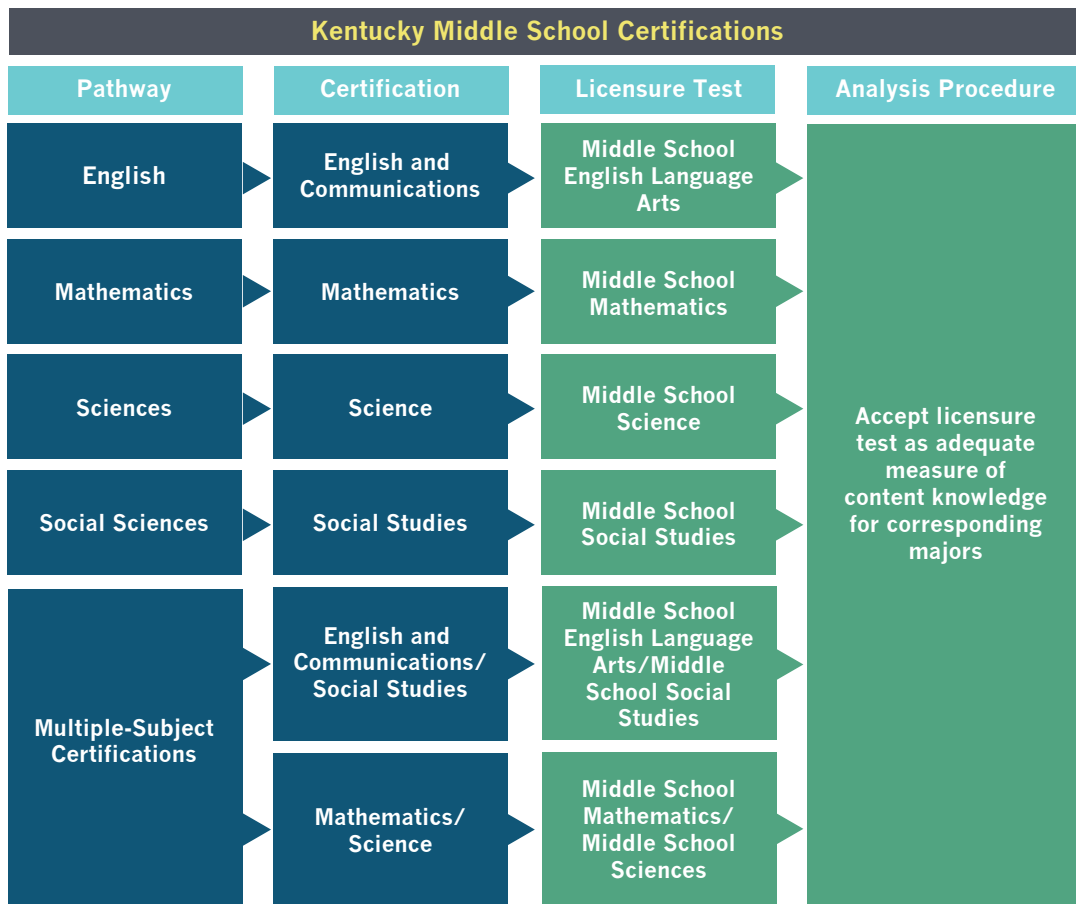
<sup>3</sup> The term “pathways” is one used by NCTQ to provide a useful standard term for a grouping of certifications in one or more subject areas.

<sup>4</sup> While most states offer only a single middle school certification in the sciences and social sciences, a handful of states offer subject-specific certifications within those pathways.

## State licensure context

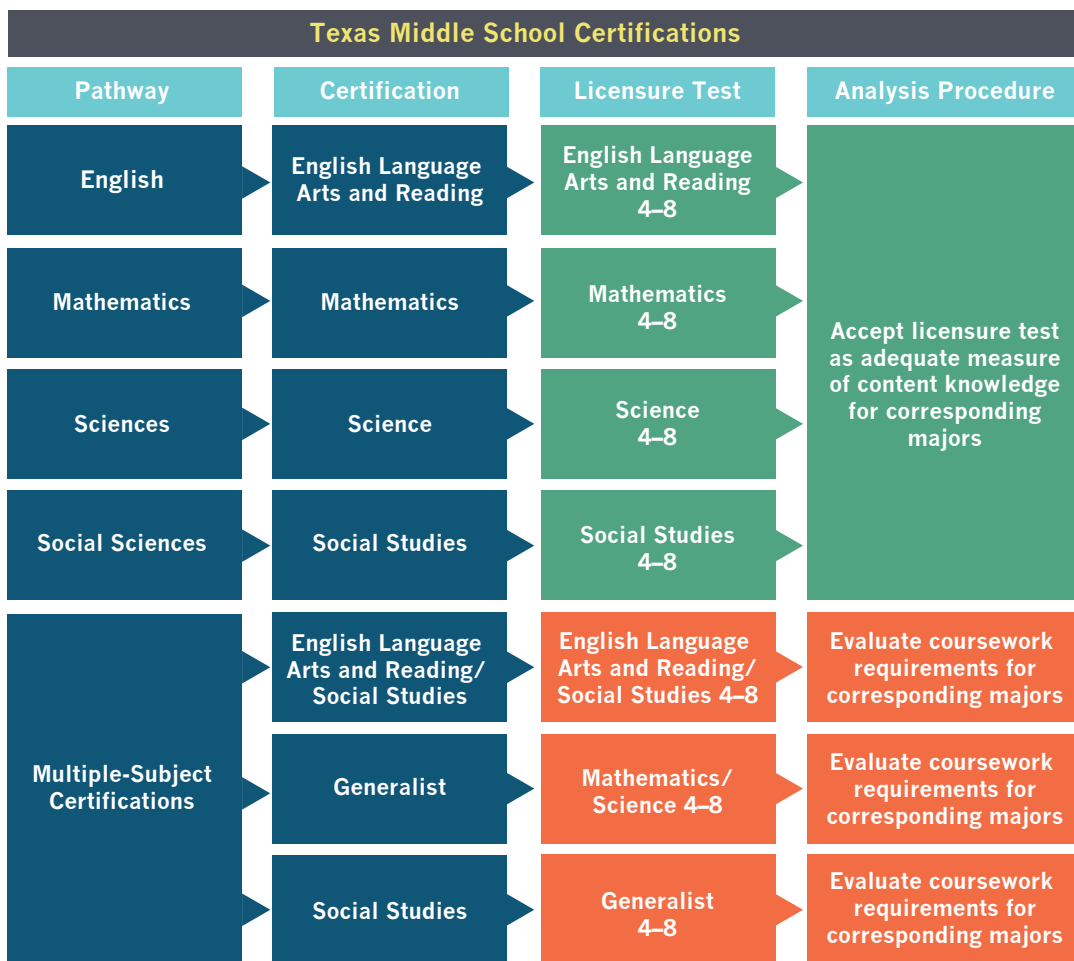
With each state’s approach to certification fully researched, evaluation of this standard continues with a review of the state licensing test(s) required for each certification. Under Indicator 7.1, if a test adequately measures content knowledge for the subject(s) for which certification is sought, content preparation is deemed adequate without any examination of course requirements for majors leading to those certifications. For this edition of the *Review*, a test is considered to adequately measure content knowledge if it has a cut-score that ensures that 5 percent or more of test takers do not pass.<sup>5</sup> Note that comprehensive tests covering the sciences and social sciences are accepted under this standard but not under the High School Content Standard.

The following examples of certification structures in **Kentucky, Texas** and **North Carolina** highlight our approach to evaluation of this standard in the context of differing certification structures.



**Kentucky** is an example of a state in which all middle school pathways satisfy this standard due to the adequacy of licensing tests. Note that both multiple-subject certifications require a separate test for each subject. This testing structure ensures that teacher candidates obtaining all types of certifications have adequate content knowledge of the subject(s) they will teach. The structure of middle school certification in most states is similar to that in Kentucky.

<sup>5</sup> In the absence of technical report data that validate the passing rates for a licensure test, we will presume that such cut-scores are set too low to verify content knowledge.



**Texas** is an example of a state in which the single-subject certifications are adequately tested, but in which each of the three multiple-subject certifications require only a single licensure test that covers more than one subject. These tests are problematic because—for example—it is possible that a teacher candidate seeking “Mathematics/Science” certification will score very well on the sciences portion of the test and do poorly on the math portion, obtain certification to teach both subjects, and then be assigned to teach one or more math classes. As a result, we examine the coursework requirements for middle school programs offering majors leading to any of the three multiple-subject certifications.

North Carolina Middle School Certifications			
Pathway	Certification	Licensure Test	Analysis Procedure
English	Middle Grades Language Arts	No test required for initial licensure	Evaluate coursework requirements for corresponding majors
Mathematics	Middle Grades Mathematics	No test required for initial licensure	Evaluate coursework requirements for corresponding majors
Sciences	Middle Grades Science	No test required for initial licensure	Evaluate coursework requirements for corresponding majors
Social Sciences	Middle Grades Social Studies	No test required for initial licensure	Evaluate coursework requirements for corresponding majors
Multiple-Subject Certifications	Middle School Language Arts/ Middle School Social Science	No test required for initial licensure	Evaluate coursework requirements for corresponding majors
	Middle School Mathematics/ Middle School Science	No test required for initial licensure	Evaluate coursework requirements for corresponding majors

**North Carolina** is an example of a state that does not require licensure tests for initial certification. To ensure that middle school teacher candidates in North Carolina have adequate content preparation, we evaluate coursework requirements for all middle school majors.

## Identification of middle school certification majors

The majors leading to middle school certification offered by each program are identified. Because this identification is central to evaluation, two analysts independently complete this work and a third analyst reconciles the results, investigating all discrepancies. The end product for each state is an extensive database identifying the pathways offered at each IHE. Below are examples of entries for programs in **Kentucky, Texas** and **North Carolina**. The majors requiring coursework evaluation because of inadequate licensure testing are circled in red:

University	State	Middle School Pathways							
		Initial Cert.	Undergraduate						
			Eng	Math	SS	Sci	Eng/SS	Math/Sci	General
Sample IHE	Kentucky	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

University	State	Middle School Pathways							
		Initial Cert.	Undergraduate						
			Eng	Math	SS	Sci	Eng/SS	Math/Sci	General
Sample IHE	Texas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

University	State	Middle School Pathways							
		Initial Cert.	Undergraduate						
			Eng	Math	SS	Sci	Eng/SS	Math/Sci	General
Sample IHE	North Carolina	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

## Analysis

After the state context is established and identification of all majors leading to middle school certification is complete, majors are evaluated using the following criteria established by the standard:

Indicator/Pathway	Passing Criteria
7.2 – Mathematics	<ul style="list-style-type: none"> <li>30 SCH in Mathematics content coursework</li> </ul>
7.3 – English	<ul style="list-style-type: none"> <li>30 SCH in English content coursework</li> </ul>
7.4 – Sciences	<ul style="list-style-type: none"> <li>30 SCH in either Biology, Chemistry, Earth Science, or Physics content coursework, or</li> <li>15 SCH in one of those fields with an additional 15 SCH in the listed sciences</li> </ul>
7.5 – Social Sciences	<ul style="list-style-type: none"> <li>30 SCH in either History, Economics, or Political Science/Government content coursework, or</li> <li>15 SCH in one of those fields with an additional 15 SCH in the listed social sciences</li> </ul>
7.6 – Multiple Subjects	<ul style="list-style-type: none"> <li>15 SCH in Mathematics, English, one of: Biology, Chemistry, Earth Science, or Physics, and one of: History, Economics, or Political Science (where appropriate)</li> </ul>

In each pathway, all possible majors must satisfy the criteria for the pathway to “pass.” The final program rating for an **undergraduate** or **graduate** middle school program on this standard is based on the proportion of the five pathways offered by the program for which content preparation is determined to be adequate either by licensure test at the state level or coursework evaluation at the program level.

The following examples illustrate how several **undergraduate** middle school majors in **Kentucky, Texas** and **North Carolina** are evaluated under this standard:

University	State	Certification	Majors	Subject-area Credit Counts									Pathway Outcome	Final Score	
				Math	English	Biology	Chem	Earth	Physics	History	Econ	Gov't			
Wingate University	North Carolina	Mathematics	Mathematics	35										7.2: Pass	4
		Language Arts	Language Arts		30									7.3: Pass	
		Science	Science			19	4	3	(6)*					7.4: Pass	
		Social Studies	Social Studies							19	3	3		7.5: Pass	
University of North Carolina at Pembroke	North Carolina	Mathematics	Mathematics	30										7.2: Pass	2
		Language Arts	Language Arts		36									7.3: Pass	
		Science	Science			11	4	8	8					7.4: Fail	
		Social Studies	Social Studies							39	6	3		7.4: Pass	
Western Kentucky University	Kentucky	Mathematics	Mathematics	Passes with state licensure test in Mathematics – coursework evaluation not required									7.2: Pass	4	
		English	Language Arts	Passes with state licensure test in English Language Arts – coursework evaluation not required									7.3: Pass		
		Science	Science	Passes with state licensure test in Science – coursework evaluation not required									7.4: Pass		
		Social Studies	Social Studies	Passes with state licensure test in Social Science – coursework evaluation not required									7.5: Pass		
		Mathematics/Science	Mathematics/Science	Passes with state licensure test in Mathematics/Science – coursework evaluation not required									7.6: Pass		
		English/Social Studies	English/Social Studies	Passes with state licensure test in ELA and Social Studies – coursework evaluation not required									7.6: Pass		
LeTourneau University	Texas	Mathematics/Science	Mathematics/Science	17		16	–	8	–					7.6: Fail	0
		English/Social Studies	ELA/Social Studies		18						21	–	3		
		Generalist	4–8 Certification	9	9	4	–	8	–	12	–	3			
Hardin–Simmons University	Texas	Mathematics	Mathematics	Passes with state licensure test in Mathematics – coursework evaluation not required									7.2: Pass	4	
		English Language Arts	English Language Arts	Passes with state licensure test in English Language Arts – coursework evaluation not required									7.3: Pass		
		Science	General Science	Passes with state licensure test in Science – coursework evaluation not required									7.4: Pass		
		ELA/Social Studies	ELA/Social Studies		15						18	3	6		7.6: Pass
Texas A&M University	Texas	English Language Arts	English Language Arts	Passes with state licensure test in English Language Arts – coursework evaluation not required									7.3: Pass	0	
		Mathematics/Science	Mathematics/Science	17		8	4	4	4						7.6: Fail
		ELA/Social Studies	ELA/Social Studies		15						12	3	12		

\***Wingate University** has a coursework requirement of “advanced science electives (6–8 credits),” which we count as part of the “additional 15 SCHs in the listed sciences.” (The “listed science” in this case is biology.)

You'll note that two programs may receive different evaluations for course requirements that at first glance look similar. For example, **Wingate University** and the **University of North Carolina at Pembroke (UNCP)** appear to have similar coursework requirements for their science certifications and both require more than 30 SCHs in total, but Wingate earns a "pass" whereas UNCP earns a "fail." The reason for the scoring difference is that Wingate requires more than 15 SCHs in a single science subject, whereas UNCP requires only 11 SCHs.

### More information about analysis of coursework requirements

**How do analysts evaluate course menus?** A major that allows teacher candidates to select from a menu of course choices can affect the credit count in coursework evaluation when it includes courses in subjects that do not suffice for content preparation for any given pathway. For example, a social studies major may allow candidates to choose eight courses from among seven social science subject areas with the only restriction being that credits be distributed over at least three of them. While a candidate might select courses that fall almost entirely within the criteria for Indicators 7.5 or 7.6, it is also possible that none of the eight courses will do so. For this reason, the major would fail on analysis and the middle school program would fail on evaluation of the social sciences pathway.

Below is an example of a menu of course choices for the social sciences with five of the possible distributions listed. In such cases it is impossible to discern where credits should be assigned, and we assume that candidates will select the least rigorous option.

Course Choice Menu Example							
<b>Choose five of the following courses:</b> <ul style="list-style-type: none"> <li>■ ANTH 121 – Cultural Anthropology (3)</li> <li>■ ANTH 221 – Physical Anthropology (3)</li> <li>■ ECON 201 – Principles of Macroeconomics (3)</li> <li>■ ECON 202 – Principles of Microeconomics (3)</li> <li>■ GEOG 101 – Introduction to Geography (3)</li> <li>■ HIS 120 – American History until 1877 (3)</li> <li>■ HIS 121 – American History since 1877 (3)</li> <li>■ HIS 201 – Ancient World History (3)</li> <li>■ HIS 202 – Medieval World History (3)</li> <li>■ HIS 211 – State History (3)</li> <li>■ PS 221 – Legislative Process (3)</li> <li>■ PS 272 – Judicial Process (3)</li> <li>■ PSYCH 101 – General Psychology (3)</li> <li>■ SOC 101 – Introduction to Sociology (3)</li> </ul>	<b>Possibility #1</b>						
	<b>HIS</b>	<b>PS</b>	<b>ECON</b>	<b>PSYCH</b>	<b>GEOG</b>	<b>SOC</b>	<b>ANTH</b>
	6	3	–	3	–	3	–
	<b>Possibility #2</b>						
	<b>HIS</b>	<b>PS</b>	<b>ECON</b>	<b>PSYCH</b>	<b>GEOG</b>	<b>SOC</b>	<b>ANTH</b>
	15	–	–	–	–	–	–
	<b>Possibility #3</b>						
	<b>HIS</b>	<b>PS</b>	<b>ECON</b>	<b>PSYCH</b>	<b>GEOG</b>	<b>SOC</b>	<b>ANTH</b>
	–	–	6	–	3	–	6
	<b>Possibility #4</b>						
	<b>HIS</b>	<b>PS</b>	<b>ECON</b>	<b>PSYCH</b>	<b>GEOG</b>	<b>SOC</b>	<b>ANTH</b>
	3	3	3	–	3	3	–
	<b>Possibility #5</b>						
	<b>HIS</b>	<b>PS</b>	<b>ECON</b>	<b>PSYCH</b>	<b>GEOG</b>	<b>SOC</b>	<b>ANTH</b>
	–	6	–	3	–	–	6

**How do analysts evaluate courses taught with a religious perspective?** Courses offering religious perspectives do not receive credit in the evaluation of this standard.<sup>6</sup> This includes science coursework that explicitly endorses religion or pseudo-scientific principles such as creationism or intelligent design, literature courses that entail religious study of the Bible (as opposed to analysis of the Bible as literature), and history courses that focus exclusively on the establishment or development of religions.

<sup>6</sup> If the programs offering these courses *only* prepared educators to teach in private religious K-12 schools, such coursework would be appropriate. All programs in the *Review*, however, are publicly approved to prepare *public* school teachers.



Coursework evaluation at the **undergraduate level** is facilitated by the specificity with which most middle school teacher preparation programs outline course requirements in catalogs. In **graduate programs**, where this specificity is less common, analysts determine if the catalog, admissions documents (such as applications and transcript review forms) or other publicly available materials show a clear institutional commitment to ensuring that graduate middle school teacher candidates meet the same requirements as outlined above, with explicit mention of acceptable undergraduate majors and/or minors and an indication of the potential for imposition of remedial coursework requirements. Graduate programs may also meet this standard by requiring candidates to complete 15 SCHs (the equivalent of a minor) of graduate-level content coursework, which ensures candidates have an understanding of higher-level concepts related to the candidates' area of certification. It is important to note that at the graduate level, the program may offer only a single middle school education major with multiple certifications within that major. In such cases, identification focuses on the possible certification options.

Common misconceptions about how analysts evaluate the Middle School Content Standard:

- *Because all licensing tests required for certification adequately evaluate content knowledge, coursework preparation is not relevant for certifications for which licensing tests are mandatory.* Licensing tests serve as an adequate measure of content knowledge only when all possible teaching assignments allowed under the certification are tested with independent cut-scores, the cut-scores are set at a sufficiently high level to ensure rigor, and the test is required for initial licensure.
- *Evaluation of the sciences and social sciences considers only general content preparation.* We consider the licensing tests in middle school science and middle school social science as adequate measures of content knowledge. Where licensing tests are not required for middle school certification, coursework requirements must include at least 15 SCHs in a single accepted content area as part of a total of 30 SCHs in the sciences or social sciences.
- *Recommended coursework can receive credit.* Teacher preparation programs must *require* coursework to ensure that teacher candidates receive the necessary background knowledge on subjects they will teach.

Information on content preparation is generally accessible in publicly available materials. If after an exhaustive search of IHE catalogs and websites we find no public mention of expectations for content preparation, we presume that none exists and score accordingly. All middle school programs in the sample could therefore be evaluated on this standard.

### Examples of what does and does not satisfy the standard's indicators

#### Determining the adequacy of content preparation on the basis of licensure tests (Indicator 7.1)

✓ - fully satisfies the indicator	✗ - does not satisfy the indicator
<p>The state requires a single-subject licensing test or a series of tests that evaluate content knowledge for any subjects covered under the certification.</p> <p><i>Tests considered for this indicator include Praxis II, AEPA, CSET, FTCE, GACE, ICTS, MTEL, MTTC, MTLE, NMTA, NYSTCE, CEOE, ORELA, TExES, and WEST-E.</i></p>	<p>Multiple-subject certifications are tested but do not have independent cut-scores for each subject covered under the certification.</p> <p>Licensing tests are not required by the state.</p>

**Considerations for coursework evaluation of majors in mathematics, English, the sciences and the social sciences pathways (Indicators 7.2-7.6)**

The criteria for this standard are the same as for Standard 8: Common Core High School Content.

Please refer to the last section of that [standard's scoring methodology](#) for examples of coursework evaluation.

**Consideration of requirements for evaluation of content preparation in mathematics, English, the sciences, the social sciences and multiple-subject certification pathways in graduate programs (Indicator 7.7)**

Content Preparation	
✓ - fully satisfies the indicator	✗ - does not satisfy the indicator
<p>For all certifications that are not adequately tested, the program requires undergraduate coursework entailing:</p> <p>1) For <b>single-subject certifications</b>, either a) a 30 SCH content-area major, or b) for the sciences and social sciences, a total of 30 SCHs, with 15 SCHs in the content area and an additional 15 SCHs in the sciences or social sciences.</p> <p>2) For <b>multiple-subject certifications</b>: 15 SCHs in a single content area for each pathway covered under the certification. (For example, 15 SCHs in history coursework — not general social sciences coursework.)</p>	<p>The program fails to specify undergraduate coursework requirements.</p> <p>The program specifies that candidates for <b>single-subject certification</b> may be admitted with fewer than 30 SCHs in the relevant content area or 30 total SCHs with 15 SCHs in a single subject.</p> <p>The program specifies that candidates for <b>multiple-subject certifications</b> may be admitted with fewer than 15 SCHs in a single subject for each pathway covered under the certification.</p>