AN ANALYSIS OF THE ALIGNMENT BETWEEN NATIONAL AND STATE GEOGRAPHY STANDARDS

by

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DEDICATION

This is dedicated to my mom, Helena Rybinska Zadrozny. Thank you for your endless love and support throughout my entire life. I owe everything to you. Kocham cię!

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First, and foremost, I would like to thank my family: mom, dad, and Adam. Thank you for letting me go and move to Texas to pursue this dream. I also want to thank Mike Logue for always believing in me. Your continued support and love has helped me get here today. I cannot thank you enough for all you have done for me.

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LIST OF ABBREVIATIONS

Abbreviation **Description**

AAG - American Association of Geographers
CCSSO - Council of Chief State School Officers
ELAR - English Language Arts and Reading
ESEA - Elementary and Secondary Education Act of 1965
ESSA - Every Student Succeeds Act
ETS - Educational Testing Service
GAO - Government Accountability Office
GENIP - Geography Education National Implementation Project
GESP - Geography Education Standards Project
GFL - Geography for Life
IASA - Improving America's Schools Act of 1994
JCGE - Joint Committee on Geographic Education
NCSS - National Council for the Social Studies
NAEP - National Assessment of Educational Progress
NAGB - National Assessment Governing Board
NCES - National Center for Education Statistics
NCEST - National Council on Education Standards and Testing
NCGE - National Council for Geographic Education
NCLB - No Child Left Behind Act
NGS - National Geographic Society
SEC - Survey of Enacted Curriculum
TEKS - Texas Essential Knowledge and Skills

ABSTRACT

The standards-based reform movement in K-12 American education began in the 1990s after a number of polls and surveys publicized the poor performance of American students in geographical knowledge. The federal government issued a call for national standards in nine core academic areas, including geography; and in 1994, *Geography for Life*: *National Geography Standards* was published. There has been a revised edition of *Geography for Life* (2012). Various studies indicate that in this 24-year period (1994-2018), there has been little improvement in the effectiveness of geography teaching and learning in the K-12 schools of the U.S.

This study investigates this continuing problem by examining the level of alignment between the national geography standards and the geography portions of a sample of social studies standards revised by states between 2014 and 2017. Using the Survey of Enacted Curriculum, an alignment index was derived to report on the level of correspondence between the national geography standards and the state standards. The results, shown both statistically and graphically, indicate that the level of alignment was low and inconsistent across the states. Such measures suggest the ineffectiveness of current national standards in geography, and provide useful evidence for the preparation of the next round of disciplinary standards preparation.

CHAPTER I

INTRODUCTION

Brief History of the Geography K-12 Standards Movement in the United States

In the early 1980s, a number of state, national and international polls and reports were released that publicized the poor performance of American students in geographical knowledge, especially when compared to other highly industrialized nations (National Assessment of Educational Progress 1979; Barrows et al. 1981; Ligocki 1982; National Commission on Excellence in Education 1983; Dallas Times Herald 1983; Kopec 1984). It was at this time that the federal government initiated a national education reform movement, thus offering a realistic opportunity for the improvement of geography teaching and learning in America's schools.

In 1989, President George H. W. Bush and the national Governors' convened for an educational summit and agreed that it was time to set "clear, national performance goals" to help make Americans globally competitive (Bush 1989). This led to the development of America 2000: Excellence in Education Act, the proposed bipartisan legislation that set national educational goals. One of the goals called for the creation of national standards and assessments in five core subject areas – English, math, science, history, and geography. This legislation later passed in 1994 as *Goals 2000: Educate America Act* (Public Law 103-227, H.R. 1804) under President Bill Clinton. Setting standards was the first step of a national education reform "designed to stimulate better teaching and learning of specific subject matter in all schools throughout the country" (de Souza and Munroe 1994).

Federal Government Measures of Student Achievement in Geography

After the inclusion of geography as a core subject in *Goals 2000: Education America Act* (Public Law 103-227), Congress authorized the National Assessment of Educational Progress (NAEP) to develop the first national geography assessment to be administered in 1994. NAEP, also known as "the Nation's Report Card," has been administering specific subject assessments (i.e. mathematics, science, U.S. history, reading, and writing) to a national sample of students in grade 4, 8 and 12 longitudinally since 1969 (National Assessment Governing Board (NAGB), n.d., 1).

The NAEP geography framework that was developed assesses students on a broad overview of geography content and analytic skills through a guiding matrix of content and cognitive dimensions (Table 1.1). The three content subdivisions are 1) Space and Place, 2) Environment and Society, and 3) Spatial Dynamics and Connections. The three cognitive levels are 1) Knowing, 2) Understanding, and 3) Applying. These "cognitive dimensions test the student's ability to perform mental tasks in these areas and expects students to in grades 4, 8, and 12 to be able to think geographically in three ways" (NAGB, n.d., p. 16).

Table 1.1. Geography Assessment Framework Elements (NAGB n.d.)

Cognitive Dimension	Content Dimension		
	Space and Place	**Environment and Society**	**Spatial Dynamics and Connections**
Knowing	Where is the world's largest tropical rain forest?	What mineral resources are often extracted by strip mining?	What factors stimulate human migrations?
Understanding	Why are tropical rain forests located near the equator?	Explain the effects of strip mining and shaft mining on the landscape.	Explain the motivations of modern-day Mexicans and Cubans for immigrating to the United States.
Applying	Support the conclusion that tropical rain forests promote wide species variation.	How can both economic and environmental interests be reconciled in an area of strip mining?	Compare current settlement and employment patterns of Cuban and Mexican immigrants in the United States.

One of the major purposes of the NAEP geography assessment is to provide longitudinal data on the performance of American students. Students' performance, as tested in 1994, 2001, 2010 and 2014 (eighth graders only), has shown little change in competency in geographic knowledge over the two decade period.

Geography's Response

Immediately following the development of the NAEP geography framework in 1992, professional geographers answered the federal call for world-class standards, and began developing a set of national geography standards. The task was made very difficult due to the lack of clear guidance from the U.S. Department of Education as to the nature and function of educational standards (Rutherford and Boehm 2004). Was the document, later to be called *Geography for Life*, supposed to identify content, skills, perspectives, or was it to state goals, abilities and performance objective or all of the above? Were assessments to be included, and perhaps even model pre-service certification programs?

After months of discussions and meetings, *Geography for Life, National Geography Standards* was published in 1994 with 18 content standards grouped into six essential elements representing what American students should learn by grade four, eight, and twelve. Each standard includes 3-5 knowledge statements that "explain exactly what the student should know and understand after completing a particular grade level" (Geography Education Standards Project (GESP) 1994, 38). In addition are 3-5 performance statements that suggest, "what the student should be able to do on the basis of this knowledge" (GESP 1994, 39).

Importance of Alignment in Standards-based Education

Alignment is an important element of the education system that entails three components: the written, taught, and tested. Alignment should be designed to ensure that students learn material on which they are tested (English and Steffy 2001; English 2010). When all three components are matched, "deep curriculum alignment" is engaged (English and Steffy 2001; English 2010). On a day-to-day basis, a teacher, using summative and formative assessments, should be constantly cognizant of specific learning objectives from the written curriculum as it is carried out through the taught curriculum. Such a process should result in proper alignment thus creating a powerful learning environment. In addition, teachers are more likely to use documents and learning materials they know are aligned and will benefit their students (Webb 1997, 9).

National education reform was based on the notion that student outcomes will improve through the creation of a coherent system of standards and assessments (Webb 1997). However, alignment is not obvious when discussing national or statewide accountability tests that became popular and were used widely in the standards-based movement. The subject-area specific NAEP and statewide assessments are norm-referenced, standardized tests that are developed independent of any specific national or state curriculum. The NAEP geography assessment, for example, has been administered to a sample of students across the nation, of a population that has been nurtured under a different set of state geography standards. In addition, within a state, there can be local control, a situation in which eighth graders may be required to pass a state developed geography assessment even though the curriculum standards vary from district to district

and school to school. These tests and subsequent student outcomes, which hold students, teachers, and schools accountable, demonstrate the vast array of content expectations.

This Study

Nearly a decade after the publication of *Geography for Life* (1994), several geography educators reflected on the implementation of national geography standards at the state level. The consensus was that integration at the state level was not as successful as hoped (Gandy and Kruger 1994; Bednarz 1997; Munroe and Smith 1998; Munroe and Smith 2000; Bednarz 2003; Anthamatten 2004; Kenney 2004; Boehm and Rutherford 2004; Zam and Howard 2005; Bednarz, Heffron, and Solem 2014). Geography standards were implemented to varying degrees across the states, and were in most instances overshadowed by history and civics (Bednarz and Bednarz 2004; Downs 2016). In 2012, a second, revised edition of *Geography for Life: National Geography Standards, second edition* was published (Heffron and Downs). Material was updated to correspond to advances in the discipline, but the central core of the volume, the six essential elements, remained very similar. There were obvious attempts to address diversity and inclusion, as well as a serious attempt to highlight the importance of geospatial technology. It has been six years since the revised edition and no follow-up analyses have been conducted concerning the implementation of these revised national standards into constantly evolving state curriculum frameworks or of the quality of state social studies standards from a geography perspective.

There have been various alignment studies conducted in English Language Arts, mathematics, and science, but none have focused on the social studies, or on geography

as it is presented in *Geography for Life* (Webb 1997; Webb 1999; Blank, Porter, and Smithson 2001; Porter, Polikoff, and Smithson 2009). These alignment studies in other subject areas have developed and utilized methods for measuring alignment between and among the written, taught, and assessed curriculum, and thus, have informed this research methodology. This study will begin with a content analysis designed to determine the degree of alignment between *Geography for Life, second edition* (2012) and a sample of state geography standards at grade 4 and grade 8. Using the Survey of Enacted Curriculum (SEC) alignment model (Blank, Porter, and Smithson 2001; Porter 2002), the predetermined uniform language for social studies, and the alignment index formula, this research will be able to accurately measure the degree of correspondence in content between national and state standards. The results of the analysis will be displayed in statistically in tabular form and existing models of content mapping.

CHAPTER II

NATURE AND SCOPE

The Problem

The national geography standards aimed to develop the "geographically-informed person" in response to a decade of data uncovering a population that lacked geographic literacy. Following its implementation in 1994 to present, evidence has surfaced that suggests that voluntary national standards in geography have not improved geography education significantly in America's schools. For example, students' performance on the 2014 National Assessment of Educational Progress (NAEP) exam in geography does not demonstrate "competence in the subject, and the proficiency levels of eighth grade students has shown no improvement since 1994" (Figure 2.1) (Government Accountability Office (GAO) 2015). Figure 2.2 shows how eighth grade students' performance has changed from 1994 to 2014, where Basic level rose from 43 percent to 48 percent, Below Basic declined from 29 percent to 25 percent. Advanced fell from four percent to three percent (NAEP 1994; NAEP 2014; GAO 2015).

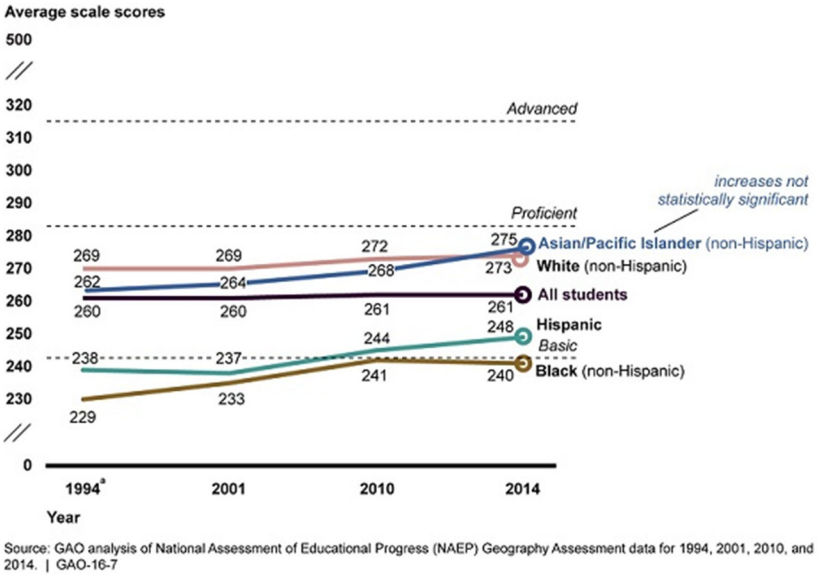
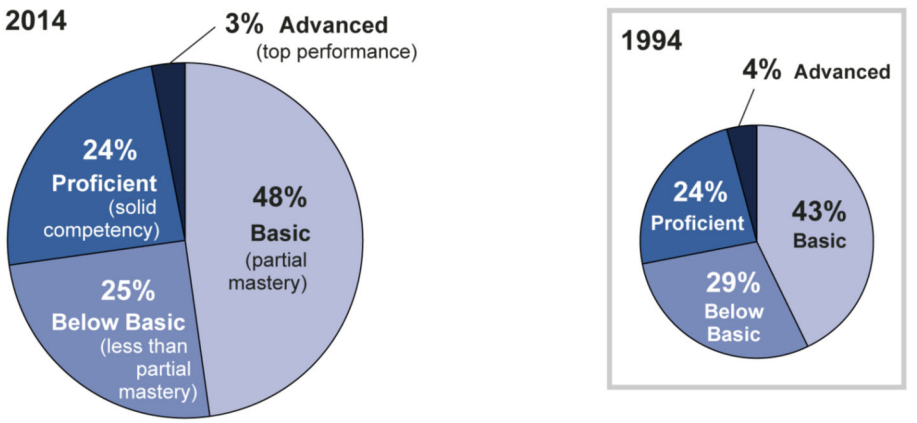


Figure 2.1. Average NAEP scores 1994-2014



Source: GAO analysis of National Assessment of Educational Progress (NAEP) Geography Assessment data for 1994 and 2014. | GAO-16-7

Figure 2.2. Geography Proficiency Levels of Eighth Graders, 2014 and 1994.

A 2016 survey from the National Geographic Society and the Council on Foreign Relations found that college students and graduates on average scored a 55 on the 75-question survey or 73.3% (Picard 2018). A representative from National Geographic Society, Becky Little, states, "although most respondents could answer the most basic questions about geography, they performed poorly on subjects that required cultural and demographic knowledge, such as questions about population, language, and religion. More than two-third of the respondents, for example, couldn't identify Indonesia as a majority-Muslim nation" (Picard 2018).

Grades on the Advanced Placement Human Geography course have also provided data that show that high school student scores have declined in the last decade, from an average score of 2.58 out of 5 in 2007 to 2.54 in 2017 (College Board). The Human Geography score, incidentally, is the second lowest subject matter score, among all 38 tests given in American schools, and the lowest within the history and social science subject area tested (Table 2.1). In addition to AP United States Government and Politics, less than half of the students who take the exam earn a "qualified" score of 3 or higher. The number of students taking the college-level AP Human Geography exam has

skyrocketed over the years, from 3,272 in its 2001 inception to 199,756 students in 2017. But only less than half pass and about 60 percent are in ninth grade and about 17 percent are in tenth grade (College Board 2018).

Table 2.1. Advanced Placement Scores for the 'History and Social Science' subject area taken by students in May 2017

History and Social Science Exams	Mean Score	% scored 3 or Higher
Economics – Macro	2.89	57.6
Economics – Micro	3.26	69.5
European History	2.81	56.0
Government & Politics Comparative	3.25	68.1
Government & Politics United States	2.58	49.3
Human Geography	**2.54**	**48.9**
Psychology	3.06	64.2
United States History	2.65	50.9
World History	2.76	55.0

A lesser scientific approach, but still revealing, are the late night show 'in the street' segments that ask the general public basic geographic questions (Leno 1992-2009, Kimmel 2003- present). The most recent one published on July 12, 2018 asked young adults to name any country on a blank Pacific-centric political boundary map. Of the six young adults shown in the video, not one could name a country; instead, they identified continents as countries. The veracity of these videos is unknown, but the media interest to display the public's lack of geographic knowledge is unchanging.

A number of factors can explain the deficiency of geographic literacy among Americans, such as the minimal instruction time combined with a lack of teacher training and professional development. A survey done by the U.S. Government Accountability Office (GAO) found that "more than half of eighth grade teachers reported spending a small portion (10 percent or less) of their social studies instruction time on geography" (GAO 2015, 11). Even more challenging is the focus of classroom time on other nationally and state assessed subjects such as reading, math, and science (VanFossen

2005; GAO 2015). Additionally, geography teachers usually are ill prepared to teach the subject matter due to no formal training or certification in geography (Vobejda, 1988; Stoltman 1990; Hill 1992; Phillips 1994; Bednarz and Bednarz 2004; Boehm, Brysch, Mohan & Backler, 2012; Bednarz, Heffron, and Solem 2014). Teachers who do attain a certification to teach often have it concentrated in history, civics, or a social studies composite (Phillips 1994). Complicating the issue, university preservice teacher training programs in social studies typically require a methods course, instead of individual content specific pedagogy. An analysis of textbooks used in social studies methods courses showed a "lack of coherence […], particularly in terms of purpose(s) for teaching social studies" (Butler, Suh, and Scott 2015, 103).

The textbook K-12 teachers' use in social studies classes can also play a factor in low geographic literacy. Evidence showed that teachers are not certified in the subject area, therefore, they rely heavily on the textbook as their source of information and guide (English 1986/1987). However, K-12 textbooks are used across state boundaries, meaning that the same geography textbook may be required in Texas, Oklahoma, Connecticut, and Wyoming (called a national edition), all of which have different geography standards that students must reach (Barton 2009, 15). This implies that students sometimes are not using a textbook that specifically addresses the state standards, consequently, failing to meet performance expectations. It is worth noting that some text publishers produce state specific geography/social studies books that are correlated to state standards.

Another plausible reason could be that the national geography standards did not fit seamlessly into state social studies frameworks, which also needed to include

standards from American history, U.S. history, civics, and economics. Geography, positioned in the K-12 social studies curriculum, focuses on world regions, culture, and human/environment interaction; whereas geography taught in higher education is process-oriented physical geography (concepts usually found in the K-12 science curriculum) and about geospatial technology (Stoltman 1990; Boehm 2015). The national geography standards tried to bring school geography more in line with academic geography without considering the difference between the K-12 school curriculum and that of higher education. This dichotomy widens as university geography departments have gone so far as to "rebrand" their department to include *environment*, *geology*, *geosciences*, or *GIS/GISci* among a few, to enhance their prestige and appeal to new students, while other departments have completely dropped the word *geography* from their name (Frazier and Wikle 2017). The gulf expands further now that the discipline has turned to geospatial technologies as the redeeming feature in what Roger Downs calls the 'geospatial revolution', where in fact K-12 teachers and schools lack the ability to incorporate this technology effectively in the curriculum (Downs 2015). Regardless of the positive or negative impact of department rebranding and geospatial technology, it neglects the reality that geography at the K-12 level is embedded in the social studies and is distinctly different then the trends of higher education geography.

Lastly, despite the development and availability of national geography standards in the early 1990s, adoption of these standards is voluntary by states (de Souza and Munroe 1994; Bednarz 1998). States have the choice to choose the geography standards that work best for the students in their state and adapt them into the state social studies standards document. These standards may either be derived verbatim from *Geography for*

Life (GFL 1994), perhaps a revised and rewritten version, or they may be brand new independently written. States are also in control of determining whether the standards are mandatory or voluntary (Bednarz 1998; Bailey and Dixon 2007). After *Geography for Life, National Geography Standards (GFL)* was published, several research studies analyzed how states incorporated *GFL* into state social studies standards (Gandy and Kruger 1994; Bednarz 1997; Bednarz 1998; Monroe and Smith 1998; Saxe et al. 1999; Munroe and Smith, 2000; Bednarz 2003; Boehm, Rutherford, and Foster 2003; Anthamatten 2004; Kenney, 2004; Boehm and Rutherford, 2004; Rutherford and Boehm, 2004; Zam and Howard, 2005; Bailey and Dixon 2007). The consensus of these studies showed that the level of implementation varied from state to state and *GFL* had little impact on state social studies/geography standards.

What's Next?

Bednarz (1998) comments "state-by-state comparisons are needed to measure improvement of geography education as a result of the development of state standards. […] geography educators must ask analytical questions, questions which focus on the kinds of standards that are in place, whether they require students to know and be able to do geography at the levels specified in *GFL,* and whether they will produce what the profession has defined as a geographically informed person. We need to know how much better off geography is today than it was before the standards were issued. If the answer to that question is 'very little,' or 'not at all,' we need to speculate about what geography educators can do to improve the situation" (84).

With the surmounting data that students' are making minimal gains on national assessments and the critical void of geography as an assessed subject at the state level, it seems that we must determine what to do to improve the situation. A revised edition of *Geography for Life* was published in 2012 with minimal changes to the 18 standards; however, it is interesting to note that no research studies followed-up the implementation of the revised edition as compared to the response after 1994. Therefore, this research is designed to investigate how successful *Geography for Life* (2012) has been voluntarily adopted and aligned through a sample of state social studies standards documents published from 2014-2017. Measuring alignment between national and state standard frameworks will allow us to see the match between the two documents and if states have adopted the national standards that outline how to become a geographically informed person.

Grade Focus

This research focuses on the grade span of kindergarten through grade eight because geography is taught across all 50 states at this grade span as a part of the social studies curriculum. Once at the high school level, courses are content specific, mostly dominated by U.S. History, World History, Economics, and Civics. However, looking at the entire grade span of K-8 is somewhat problematic since *Geography for Life* identifies what students should know and be able to do in the form of benchmarks at grade 4 and grade 8. Therefore, correspondence was measured at these two grade levels. Since every state developed academic content standards differently, some states defined standards at each grade level, while others defined standards in grade ranges (Rabinowitz, Roeber,

Schroeder, and Sheinker 2006). Therefore, an examination of grade bands was also completed to ensure alignment was not missed due to a difference in grade level.

State Sample

States included in this analysis, shown in Table 2.2, include those that have revised, adopted, and published their social studies standards from 2014 to 2017, two years after the publication of *Geography for Life* second edition (2012). Revising state standards tends to be a yearlong process, so this ensures that states with a revision date of 2014 had the option to be informed by the second edition of *Geography for Life* (2012). This follows a similar length of time that Munroe and Smith (1998; 2000) followed during their appraisal of states after the 1994 edition. Nineteen states have a 2014 to 2017 revision date for their current social studies standards providing a sample of 40 percent of the states. An additional 11 states are either currently revising or will start in the year 2018. Appendix X displays the revision/adoption date of the current social studies standards and the scheduled revision date for all 50 states and the District of Columbia.

Table 2.2. States that revised their social studies standards from 2014-2017

State	Adoption Date of Current Social Studies Standards
Arkansas	2014
Connecticut	2015
Delaware	2016
Georgia	2016
Idaho	2016
Illinois	2017
Indiana	2014
Iowa	2017
Kentucky	2015
Maryland	2015
Missouri	2016
Nevada	2017
New Jersey	2014
South Dakota	2015

Table 2.2. Continued. States that revised social studies standards from 2014-2017

Utah	2010 (K-6) & 2017 (7-12)
Vermont	2017
Virginia	2015
West Virginia	2016
Wyoming	2014

The Nature of Curriculum Alignment

Curriculum alignment focuses on three components: the written, taught, and assessed. This research focuses solely on the written (also referred to as the intended curriculum; or in this study, standards framework). The Survey of Enacted Curriculum is designed to collect data on the taught curriculum, but that is beyond the scope of this study. Also outside of the scope of this study is data having to do with the alignment of assessments. This includes both national and state assessments and students' performance on those assessments. Only a handful of states assess geography at a statewide level and it is usually in combination with a history exam. The National Assessment of Educational Progress (NAEP) results in geography are only reported and available on a national not state basis, so any comparison to student outcomes on a state basis would be speculative and not definitive.

Generally speaking, the paucity of analytic evaluation of curriculum alignment has made it very difficult to make reasoned assumptions of teaching and learning, comparisons from state to state, school district to school district, and the value of content and performance standards, as well as the nature and reliability of assessment protocols.

Federal Legislation

Even though in the next chapter a discussion of federal legislation concerning the educational reform movement is presented, it only covers America 2000: Excellence in Education Act (failed legislation) and *Goals 2000: Educate America Act*, which called for the development of national and state standards in the ten core academic subjects, including geography. The literature review does not cover President Johnson's *Elementary and Secondary Education Act of 1965* (ESEA) (P.L.89-10), which was then reauthorized and revised during President Clinton's term to *Improving America's Schools Act of 1994* (IASA), again in 2001 during President Bush's term to *No Child Left Behind Act* (NCLB), and lastly in 2015 under President Obama to *Every Student Succeeds Act* (ESSA). As important as these pieces of legislation are on the educational reform movement in the United States, they are out of the scope of this study. These laws introduced testing requirements that have ultimately weakened the importance of geography education and marginalized the social studies (Bednarz, Heffron, and Solem 2014; GAO 2015). A subsequent study about national and state assessments would include a discussion of these laws and their impact on geography education.

CHAPTER III

LITERATURE REVIEW

Education Reform Movement in the United States

Student Performance in Geography

In the 1980s, attention to the lack of geographic knowledge of American students became widespread and alarming. Various state, national, and international polls and studies showed that students graduated from high school without the geographic knowledge, skills, and attitudes to be good citizens and globally competitive (Meredith 1985). The 1979 National Assessment of Educational Progress (NAEP) survey "indicated that geographic knowledge of high school students is inadequate and that enrollment and achievement in geography education are low" (NAEP 1979; Meredith 1985). A comprehensive survey of college student's international knowledge conducted by the Educational Testing Service (ETS) reported that "students' international knowledge and understanding was extremely low" (Barrows et al. 1981; Meredith, 1985; Hayward and Siaya 2001).

In 1981, Secretary of Education T. H. Bell created the National Commission on Excellence in Education to examine the quality of education in the United States. The report, titled *A Nation at Risk: The Imperative for Educational Reform*, published in 1983, found that American education was declining in large part because of inadequacies in the way the educational process was conducted. Findings that focused on geography as subject matter revealed a weak curriculum with only 16 percent of high school students completing a geography course (National Commission on Excellence in Education 1983). In addition, expectations of students were at a low level, time spent in school and on

academic subject matter was far less than in other industrialized nations, and there was a shortage of qualified teachers (National Commission on Excellence in Education 1983; Altschul 1984).

A 1983 *Dallas Times Herald* survey of twelve year olds in eight highly industrialized nations in science, mathematics, and geography supported the findings of *A Nation at Risk*, by uncovering a school population in the U.S. that scored poorly in geographic knowledge. American students ranked fourth among the eight groups (Meredith 1985). Kopec (1984) surveyed and tested a group of over 2,000 undergraduate university students on geography in North Carolina. The results showed a high percentage of students that never had a geography course during their education in grades K-12. The results indicated that 71 percent never had instruction in geography in elementary school, 65 percent in middle school, and 73 percent in high school, ultimately a probable reason why ninety-seven percent of the freshman students tested and ninety-three percent of the upperclassmen failed the test. Ligocki (1982) and Fine (1951) obtained similar results in earlier studies.

The 1988 study *Geography: An International Gallup Survey,* commissioned by the National Geographic Society, solidified the notion that American students lacked global knowledge and geographic literacy. The study surveyed 10,820 adults 18 years and older in the United States, Mexico and Canada, plus six other industrialized nations including Sweden, West Germany, Japan, France, the United Kingdom, and Italy (The Gallup Organization 1988; New York Times 1988; Vobejda 1988). Overall, American adults averaged 8.6 points out of 16, scoring among the bottom third. The Swedes tested best with 11.6 points followed by Germans with 11.2 points and Canadian adults third

with 9.2. British adults were comparable with an average 8.5 points, followed by Italy and Mexico in the bottom two. The most alarming result of the survey was that among the 18-to 24-year-old population, Americans tested lower than every other country and of all the other age groups in the United States, averaging a score of 6.9 points (The Gallup Organization 1988; New York Times 1988; Vobejda 1988). In a separate survey of 1,611 Americans, 18 to 24 years old again received the lowest scores (New York Times 1988). A follow-up survey of 3,000 high school students administered by National Assessment of Educational Progress (NAEP) and the National Geographic Society (NGS) Education Foundation found that less than two-thirds of participating students took a geography course during their high school education. Only 57 percent correctly answered the most basic location questions (Allen 1990). While these results were alarming it is only fair to point out that in any comparative international survey varying degrees of curriculum requirements are apparent in countries (Butt and Lambert 2014). Geography is a compulsory subject in Japan, Sweden and the United Kingdom (Phillips 1994; Tilbury and Williams 2003; Murphy et al. 2005), whereas in the United States only a handful of states require a geography course (Vobejda 1988). Nonetheless, the results of these tests/surveys were discouraging. In response, three major groups took action to reform K-12 geography: professional geography educators, the National Geographic Society (NGS), and the federal government.

Professional Geographers Response

In the midst of all of the surveys highlighting poor geographic knowledge, professional geography educators formed the Joint Committee on Geographic Education

(JCGE) consisting of the National Council for Geographic Education (NCGE) and the Association of American Geographers (AAG) in 1982 with the task to upgrade school geography by preparing a new and useful recommended grade level scope and sequence for teaching and learning geography. The result was the publication of the *Guidelines for Geographic Education: Elementary and Secondary Schools* (Natoli 1984), a curriculum framework for K-12 teachers that provided a content and skills sequence in geography for grades K-6 and a recommended program for high school stand-alone geography courses. It was in the *Guidelines* that the five fundamental themes of geography were first articulated (location; place; relationships within places, later to become human-environmental relations; relationships between places, or movement; and regions). Following the *Guidelines* were two teacher guidebooks, *K-6 Geography: Themes, Key Ideas, and Learning Opportunities* (GENIP 1987) and *7-12 Geography: Themes, Key Ideas, and Learning Opportunities* (GENIP 1989), that provided teaching and learning guidelines in geography by grade level (Petersen, Natoli, and Boehm 1994; Natoli 1986). These three documents provided teachers with a helpful grade level framework that was organized by the simple but creative five fundamental themes. These "themes" have persisted in American geography education for more than three decades.

National Geographic Society Response

About the same time in the mid-1980s, Gilbert M. Grosvenor, then President of the National Geographic Society (NGS), responded to the crisis in geography education by launching a state-specific alliance network in geography education. This network was organized and supported by NGS through their Geography Education Program (Bettis

1995; Gandy and Kruger 2004; McClure 2018). The major goal of the Alliance network was to promote geographic education by assisting in-service teachers through various professional development efforts. The five fundamental themes of geography became the content focus of NGS sponsored and coordinated workshops and summer institutes (Dulli 1994; Petersen et al. 1994; Grosvenor 1995; Morrill et al. 1995) and served as a meaningful guide for instructional materials and textbooks in geography. By 1994 there was a geographic Alliance in each state, District of Columbia, Puerto Rico, and Canada (McClure 2018). This was a time of strong and consistent advocacy for the improvement of geography education in America's schools.

Federal Government Response

Despite the efforts of the Joint Commission of Geographic Education and the National Geographic Society, the negative results of the 1988 Gallup Organization survey warranted the attention of President George H. W. Bush and the National Governors' as they met for an educational summit in Charlottesville, Virginia in September 1989. One of the leaders during the summit was the Governor from Arkansas, Bill Clinton, who was the leader of the education task force of the National Governors' Association (Klein 2014). The outcome of this summit was a consensus that it was time "to establish clear, national performance goals" in the United States (Bush 1989). This led to the development of the National Education Goals, six educational goals proposed by President Bush in a piece of legislation titled America 2000. In America 2000, goal three stated:

> "By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter, including English, mathematics, science, history, and geography, and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy" (Bush, State of the Union address, January 1990).

The federal call for national standards in geography was significant for the discipline because it designated geography as a critical subject in the national education plan. However, geography still faced a major struggle because of its minor role in the American K-12 social studies curriculum that dates to the early 1900s (Stoltman 1990). In 1911, the National Education Association secondary school curriculum review "conceived social studies to represent a single field of study encompassing all the social sciences, without discipline boundaries" (Meredith 1985; Stoltman 1990). Eight decades later the National Council for the Social Studies (NCSS) stipulated that the social studies include the disciplines of history, geography, economics, civics, anthropology, archaeology, law, philosophy, political science, psychology, religion, and sociology (NCSS 1994, p. vii). Practically speaking, by 1990 geography had become one of the four main contributing disciplines in the social studies (History, Civics, Geography, and Economics) (Stoltman 1990).

Already by the mid-1950s, "geography's role as a specific subject had greatly diminished as the social studies curriculum was more widely adopted" (National Council

of Geography Teacher 1956; Stoltman 1990). As a result, across all fifty states in grades K-6, geography is widely considered a part of the social studies curriculum, while in grades 7-12 states offered geography instruction as a strand in other courses in the social studies and/or teach it in combination with the history curriculum (National Assessment Governing Board n.d., 35). Only a handful of states presently require a stand-alone geography course for graduation (Zadrozny 2017).

America 2000 was received to a mixture of concerns (Barton 2009). Liberals were unsure of testing provisions, while conservatives believed that national standards and assessments gave the federal government too much control, overpowering state and local guidelines, something President Bush did not intend (Ravitch 1995). Secretary of Education Lamar Alexander urged the bipartisan National Council on Education Standards and Testing (NCEST), established in 1991 by Public Law 102-62, to "advise on the desirability and feasibility of national standards and tests". NCEST confirmed the desirability of national standards aligned with assessments in their 1992 final report *Raising Standards for American Education*, but "did not advocate a [single] national test" (Barton 2009, 5; NCEST 1992, 11). Instead, the Council recommended a system of assessments that allowed states greater independence in selecting curricula and assessment. Ultimately, this meant that even though a set of national standards for achievement would be created, state curricula as assessments would not necessarily be guided by them, nor would they become part of a "national curriculum". At this time, the National Assessment of Educational Progress (NAEP) was authorized by Congress to assess geography among other subjects in 1994 (National Assessment Governing Board, n.d., v). President Bush ended up letting the bill die as his first term of presidency ended

with the hopes of reinvigorating it during his second term (New York State Archives 2009).

Bill Clinton, Governor of Arkansas and a leader of the Charlottesville education summit, won the 1992 Presidential election and signed into law *Goals 2000: Educate America Act* (H.R. 1804) in February 1994. *Goals 2000* updated Goal 3 to state:

> "[Section 102] Student Achievement and Citizenship
>
> (A) By the year 2000, all students will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our Nation's modern economy. … [The objectives for this goal include the following:]
>
> (ii) the percentage of all students who demonstrate the ability to reason, solve problems, apply knowledge, and write and communicate effectively will increase substantially;
>
> (iii) all students will be involved in activities that promote and demonstrate good citizenship, good health, community service, and personal responsibility; …
>
> (vi) all students will be knowledgeable about the diverse cultural heritage of this Nation and about the world community" (H.R. 1804; Public Law 103-227)

The standards movement gained momentum as national content standards and national student performance standards were created. Quickly, state education agencies developed their own content standards and student performance expectations.

The idea behind the creation of curriculum standards was to establish what students "should know and be able to" within the subject matter (H.R. 1804; Public Law 103-227). Assistant U.S. Secretary of Education during the 1980s and 1990s, Diane Ravitch, believed that curriculum standards should identify the knowledge students must learn but also take into account that each school and classroom is different. Null (2017) supports this belief that content standards should be adapted and modified by teachers to best fit their students. Standards should not be forceful, but a mere guide for teachers to use in order to provide consistency. On the contrary, Fenwick English, who combined business ideas with education, believed the curriculum should control what teachers do (1986/1987; 2010). English (2010) saw curriculum as a system which denoted a teacher's work plan and could be aligned, audited, and delivered efficiently. Ultimately, both ideas resonate within the U.S. curriculum system. Some states adhere to English's strict idea of curriculum alignment where the standards dictate what the teacher teaches daily. Other states are more reflective of Ravitch's and Null's approach and are sensitive to local control (Zadrozny 2017).

Standards-based Education and the Development of Curriculum Frameworks

Curriculum Frameworks versus Curriculum

It is important to differentiate between a curriculum framework and curriculum. A curriculum framework is a document written by a group of teachers, content specialists,

school administrators, education officials, etc. that prescribe general expectations. In geography, national content standards as displayed in *Geography for Life* (Geography Education Standards Project (GESP) 1994) and are written to identify what students should know and be able to do. Curricular frameworks are developed and interpreted, adapted, and then adopted by school districts. Curricular frameworks, such as those developed as state social studies standards, can either be strictly followed or be seen as a guide for teachers to follow in the classroom, which leads this discussion to the nature of curriculum.

Curriculum consists of the daily lesson plans used by teachers to direct learning by their students. Commonly referred to as the taught curriculum, it is what the teacher teaches on the day-to-day basis and is typically based on one or more curricular frameworks such as state standards, national standards, or state assessment frameworks. When a teacher pulls their curriculum from mandatory state assessed subjects like mathematics or science, it is commonly known as "teaching to the test" (English and Steffy 2001; English 2010). Another example of how curriculum is determined is the condition certain states have that requires teachers to address the content standards explicitly in their lesson plans. Other states are less rigid and consider their content standards as suggestions for the curriculum (Phillips 1994; Zadrozny 2017).

National Assessment of Educational Progress

After the inclusion of geography as a core subject in the America 2000 federal legislation, Congress authorized the National Assessment of Educational Progress (NAEP) to develop the first national geography assessment to be administered in 1994.

NAEP, also known as “the Nation’s Report Card,” has been administering specific subject assessments (i.e. mathematics, science, U.S. history, reading, and writing) to a national sample of students in grade 4, 8 and 12 since 1969 (National Assessment Governing Board, n.d., 1). The National Assessment Governing Board (NAGB)-- the policy making body established by Congress to oversee the NAEP-- began the consensus development process as early as July 1991.

The framework was designed and written by a Planning Committee comprised of geography content and cognitive development experts, curriculum coordinators, assessment experts, teachers, and geography specialists, that was charged with creating a rich and rigorous assessment design guided by the idea that a broad knowledge of geography is an essential part of a full education (NAGB, n.d., v). This process lasted from July 1991 to June 1992. The Items Specification subcommittee of the Planning Committee was asked to prepare descriptions of achievement levels that reflect top standards. The achievement levels describe what students should know and be able to do by grade 4, 8 and 12 to reach Basic, Proficient, or Advanced level of achievement (NAGB, n.d., v). A student reaching advanced achievement is equivalent to the achievement expected of top students in other industrialized nations (NAGB n.d., 39). This holds U.S. students to a world-class standard, which, practically speaking, is difficult to achieve given the differences in curriculum and teaching of geography in different industrialized countries.

The NAEP framework assesses students on a broad overview of geography content and analytic skills through two dimensions: a content dimension and a cognitive dimension (Table 3.1). The three content areas that make up the content dimension are 1)

Space and Place, 2) Environment and Society, and 3) Spatial Dynamics and Connections. The three cognitive areas are defined as 1) Knowing, 2) Understanding, and 3) Applying. These "cognitive dimensions tests the student's ability to perform mental tasks in these areas and expects students to in grades 4, 8, and 12 to be able to think geographically in three ways each progressively more complex and difficult (NAGB, n.d., p. 16). The table provides example assessment questions for each content and cognitive dimension. The NAEP geography framework expanded from the Five Themes of Geography in an attempt to establish clear assessment items for specific content dimensions (Table 3.2). The NAEP framework established the three content dimensions combining the physical science and social science aspects of geography, something that the Five Themes were often criticized about lacking (Hill 1992; Bednarz, Tchakerian, and Giradino 1993; Bednarz, Heffron, and Solem 2014). This framework has been maintained for the geography assessments that have been conducted in 1994, 2001, 2010 and 2014.

Table 3.1. Geography Assessment Framework Elements (NAGB n.d.)

Cognitive Dimension	Content Dimension		
	Space and Place	**Environment and Society**	**Spatial Dynamics and Connections**
Knowing	Where is the world's largest tropical rain forest?	What mineral resources are often extracted by strip mining?	What factors stimulate human migrations?
Understanding	Why are tropical rain forests located near the equator?	Explain the effects of strip mining and shaft mining on the landscape.	Explain the motivations of modern-day Mexicans and Cubans for immigrating to the United States.
Applying	Support the conclusion that tropical rain forests promote wide species variation.	How can both economic and environmental interests be reconciled in an area of strip mining?	Compare current settlement and employment patterns of Cuban and Mexican immigrants in the United States.

Table 3.2. The Five Themes of Geography and the three content dimensions of the NAEP Geography Assessment Framework (Natoli 1984; NAGB n.d.)

Five Themes of Geography	NAEP Assessment Framework
LOCATION – Position on Earth's surface	SPACE AND PLACE – Knowledge of geography related to particular places on Earth, to spatial patterns on Earth's surface, and to physical and human processes that shape such patterns
PLACE – Physical and Human Characteristics	
HUMAN/ENVIRONMENT INTERACTION – Relationships within Places	ENVIRONMENT AND SOCIETY – Knowledge of geography related to the interactions between environment and society
MOVEMENT – Human Interacting on Earth	SPATIAL DYNAMICS AND CONNECTIONS – Knowledge of geography related to spatial variations and connections among people and places.
REGIONS – How they Form and Change	

Geography Education Standards Project

Immediately following the development of the NAEP geography assessment framework in 1992 came the development of *Geography for Life: National Geography Standards* (Geography Education Standards Project (GESP) 1994). A writing committee of experienced K-12 teachers and university geography educators convened over a two-year period to produce world-class geography standards. During the development of the national geography standards, there was only minimal attention paid to alignment with the forthcoming NAEP geography assessment and the *Guidelines for Geographic Education* (1984) (GESP 1994; Rutherford and Boehm 2004). In preparation to write national geography standards, the writing committee "followed the U.S. Department of Education's criteria for national standards projects and the National Council on Education Standards and Testing's recommendations. They also paid attention in the later stages of the project to *Promises to Keep: Creating High Standards for American Students*, a report on the Review of Education Standards from the Goals 3 and 4

Technical Planning Group to the National Education Goals Panel (November 1993)" (GESP 1994, 246). Despite these few recommendations, the writing committee bemoaned the fact that there was no widely accepted method suggested for common frameworks across disciplines. This resulted in ten somewhat different national standard documents from each of the core academic subjects (Rutherford and Boehm 2004).

Following the NAEP model, a similar consensus process was planned with input from hundreds of reviewers spanning from state social studies and science coordinators, geography teachers, National Geographic Society Alliance network coordinators, state and local boards of education, and others. After months of discussions and meetings, *Geography for Life, National Geography Standards* was published in 1994 with 18 content standards grouped into six essential elements representing what American students should learn by grade four, eight, and twelve (Table 3.3). Each standard includes 3-5 *knowledge statements* that "explain exactly what the student should know and understand after completing a particular grade level" (GESP 1994, 38). In addition are 3-5 *performance statements* that suggests "what the student should be able to do on the basis of this knowledge" (GESP 1994, 39). Accompanying the performance statements are three activity suggestions. These standards reflected what the very best minds in geography education thought students should know and be able to do by each grade span. This effort was "top-down", that is, every student was expected to learn everything in this national curriculum framework "to attain high level of competency" (GESP 1994). The six essential elements in final form were: 1) The World in Spatial Terms, 2) Places and Regions, 3) Physical Systems, 4) Human Systems 5) Environment and Society, and 6) Uses of Geography (GESP 1994). *Geography for Life* also included the five geographic

skills, adapted from the *Guidelines in Geographic Education* (1984): 1) asking geographic questions, 2) acquiring geographic information, 3) organizing geographic information, 4) analyzing geographic information, and 5) answering geographic questions.

Table 3.3. *Geography for Life: National Geography Standards* (GESP 1994)

Essential Element	Standard
1. THE WORLD IN SPATIAL TERMS – using maps, tools and technologies to observe and analyze the world	1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective
	2. How to use mental maps to organize information about people, places, and environments in a spatial context
	3. How to analyze the spatial organization of people, places, and environments on Earth's surface
2. PLACES AND REGIONS – the nature of places and regions	4. The physical and human characteristics of places
	5. That people create regions to interpret Earth's complexity
	6. How culture and experience influence people's perceptions of places and region
3. PHYSICAL SYSTEMS – how physical processes interact within ecosystems	7. The physical processes that shape the patterns of Earth's surface
	8. The characteristics and spatial distribution of ecosystems on Earth's surface
4. HUMAN SYSTEMS – how humans have organized space to satisfy needs	9. The characteristics, distribution, and migration of human populations on Earth's surface
	10. The characteristics, distribution, and complexity of Earth's cultural mosaics
	11. The patterns and networks of economic interdependence on Earth's surface
	12. The processes, patterns, and functions of human settlement
	13. How the forces of cooperation and conflict among people influence the division and control of Earth's surface
5. ENVIRONMENT AND SOCIETY – the impact of human activity on the physical environment and how physical systems affect humans	14. How human actions modify the physical environment
	15. How physical systems affect human systems
	16. The changes that occur in the meaning, use, distribution, and importance of resources
6. THE USES OF GEOGRAPHY – an understanding of geography can contribute to a higher quality of life and meaningful careers	17. How to apply geography to interpret the past
	18. How to apply geography to interpret the present and plan for the future

(Note: Explanations of the six essential elements from Boehm and Petersen 1994)

National Council for the Social Studies

While national standards were being developed in the major social studies content subjects of history, geography, economics, and civics, there was no call for a set of social studies standards. To ensure K-12 social studies teachers were not faced with a large number of content standards for which their students were accountable, the National Council for the Social Studies (NCSS) appointed a task force of K-12 teachers, higher education teacher educators, and state and school district social studies supervisors to develop social studies standards from 1993 to 1994 (NCSS 1994, viii). The final document *Expectations for Excellence: Curriculum Standards for Social Studies* was published in Fall 1994 and outlined the ten themes of social studies as shown in Table 3.4 (NCSS 1994). Each theme has a curriculum standard that "is a statement of what should occur programmatically in the formal schooling process; it provides a guiding vision of content and purpose. … These curriculum experiences should enable students to exhibit the knowledge, skills, scholarly perspectives, and commitments to American democratic ideals identified in the performance expectation" (NCSS 1994, 14).

Table 3.4. Ten Themes of Social Studies (NCSS 1994)

Theme	**Curriculum Standard** Social studies programs should include experiences that provide for the study …	**Major Discipline Focus**
1. CULTURE	… of culture and cultural diversity.	Geography, history, sociology, and anthropology
2. TIME, CONTINUITY, AND CHANGE	… of the ways human beings view themselves in and over time.	History
3. PEOPLE, PLACES, AND ENVIRONMENTS	… of people, places, and environments.	Geography and area studies
4. INDIVIDUAL DEVELOPMENT AND IDENTITY	… of individual development and identity.	Psychology and anthropology
5. INDIVIDUALS, GROUPS, AND INSTITUTIONS	… of interactions among individuals, groups, and institutions.	Sociology, anthropology, psychology, political science, and history

Table 3.4. Continued. Ten Themes of Social Studies (NCSS 1994)

6. POWER, AUTHORITY, AND GOVERNANCE	… of how people create and change structures of power, authority, and governance.	Government, politics, political science, history, law
7. PRODUCTION, DISTRIBUTION, AND CONSUMPTION	… of how people organize the production, distribution, and consumption of goods and services.	Economics
8. SCIENCE, TECHNOLOGY, AND SOCIETY	… of relationships among science, technology, and society.	History, geography, economics, civics and government
9. GLOBAL CONNECTIONS	… of global connections and interdependence.	Geography, culture, and economics
10. CIVIC IDEALS AND PRACTICES	… of the ideals, principles, and practices of citizenship in a democratic republic.	History, political science, and cultural anthropology

Due to the multidisciplinary and interdisciplinary nature of the social studies, the ten themes at times incorporates various fields of study. For example, theme one "Culture" includes elements of anthropology, geography, history, and sociology (Table 3.4). Looking at the ten themes, there are four that involve lots of geography (1, 3, 8, and 9), but geography plays a supplementary role in the themes of Power, Authority, and Governance (Theme 6) and Production, Distribution and Consumption (Theme 7) (Zam and Howard 2005). Since content standards were developed for the social studies and individual subject areas, NCSS intended for their curriculum "standards address overall curriculum design and comprehensive student performance expectations, while the individual discipline standards provide focused and enhanced content detail" (NCSS 1994, viii). This however had an overall effect on the implementation of national geography standards (Bednarz, Heffron, and Solem 2014).

By the end of 1994, three new national sets of curriculum standards involving geography were published and available for states to adopt and teachers to use: 1) *Geography Assessment Framework* (NAEP), 2) *Geography for Life* (GESP), 3)

Expectations in Excellence (NCSS), in addition to the already available *Guidelines for Geographic Education* (1984). Each framework consisted of a different organizing content framework as shown in Table 3.5. The *Guidelines* provided the "five fundamental themes of geography", the NAEP assessment established the "three content dimensions", while *Geography for Life (GFL)* developed the "six essential elements", and the NCSS organized the "ten themes of social studies." At first glance only "Environment and Society" can be found in both NAEP and *GFL*, and is encompassed in the NCSS theme "People, Places, and Environments" and the *Guidelines* theme "Human/Environment Interaction". Otherwise, there was very little alignment across the frameworks that provided an overall agreement of what teachers should teach and students should learn and be able to do.

Table 3.5. A side-by-side comparison of the different content frameworks available in geography by the end of 1994.

***Guidelines for Geographic Education* (1984)**	**NAEP *Geography Assessment Framework* (1994)**	***Geography for Life: National Geography Standards* (1994)**	***Expectations for Excellence: Curriculum Standards for Social Studies* (1994)**
Location	Space and Place	The World in Spatial Terms	Culture
Place	Environment and Society	Places and Regions	Time, Continuity, and Change
Human/Environment Interaction	Spatial Dynamics and Connections	Physical Systems	People, Places, and Environments
Movement		Human Systems	Individual Development and Identity
Regions		Environment and Society	Individuals, Groups, and Institutions
		The Uses of Geography	Power, Authority, and Governance
			Production, Distribution, and Consumption
			Science, Technology, and Society
			Global Connections
			Civic Ideals and Practices

Individual State Social Studies Standards Development

After the publication of national standards, states began developing their state standards with reference to and guidance from *Goals 2000*. *Goals 2000* offered grants to states to support the "development of standards and assessments and school district implementation of standards-based reform" (New York State Archives 2009, 65). The largest recipient of these funds was the state of Texas, which received over $100 million to develop the Texas Essential Knowledge and Skills (TEKS) standards and assessments (New York State Archives 2009). It was important that the federal government was not to be seen using *Goals 2000* as a way to establish national standards but instead keep the control of education at the state level. This hindered the federal government's ability to oversee states development of comparable, high-quality standards and assessments. In an effort to ensure comparable and rigorous state standards and assessments, Clinton proposed the creation of a National Education Standards and Assessment Council, later renamed National Education Standards Improvement Council (NESIC) (New York State Archives 2009, 66). Unfortunately, conservatives resisted NESIC in fear of mandating "too much federal control of state decisions" and the liberals rejected it for the "potential for promoting national tests" (New York State Archives 2009). This meant that standards-based initiatives continued to vary from state to state, district to district, and school to school with no common criterion of quality.

Standards Implementation in Geography Education

As Barton (2009) states, "the rigor and quality of existing state standards vary greatly, and states have different mindsets about what content standards are intended to

do" (9). A number of studies attempted to measure the success of *Geography for Life* in reaching goals stated in the national standards movement.

For example, the Thomas B. Fordham Foundation attempted to measure rigor and quality of state standards and "commissioned studies of state academic standards in all five of the core subjects" (Finn 1998, v). Geography was the third targeted subject area of the original core five identified in America 2000. The geography appraisal, prepared by Susan Monroe and Terry Smith of the Casados Group was published in 1998 titled, *State Geography Standards: An Appraisal of Geography Standards in 38 States and the District of Columbia*. By 1998, 38 of the 50 states and the District of Columbia had state specific social studies frameworks or curriculum-framework related documents (Munroe and Smith 1998).

The evaluation judged the penetration of national geography standards into state social studies frameworks in two categories: "general characteristics" and "comprehensiveness and rigor" on a scale from 0-3. The former was scored against six criteria: clarity, specificity, balance as to point of view, use of active verbs against which progress can be gauged, inclusion of benchmarks, and guidance to teachers. The latter was judged upon eight content and skill criteria (the world in spatial terms, places and regions, physical systems, human systems, environment and society, skills, applications, and organization) to determine how well each state's standards were in addressing key content knowledge and concepts, as well as a students' ability to gain a spatial perspective and apply it to their lives. The criteria were guided by the geography content and skills contained in the first edition of *Geography for Life: National Geography Standards*. The maximum score for "general characteristics" was 18, whereas the

"comprehensiveness and rigor" rubric was graded for each grade cluster for a maximum score of 72 (24 maximum score for each grade cluster: K-4, 5-8, 9-12) for a total maximum score of 90.

States were then graded based upon the total score and reported as a national report card for the overall quality of state geography standards (Table 3.6). Unfortunately, their findings showed that the state geography standards were weak. Three states received an A (80 and above on a 90-point scale), three states received a B (70-79 points), nine states received C's (60-69 points), six states received D's (50-59 points), 18 states received a F (fewer than 50 points), and twelve states received I's for incomplete either due to not having standards or were under development (Table 3.6). Munroe and Smith followed up this 1998 evaluation two years later in 2000 to see how states changed after the first report. Changes were "good but modest" with the national average going from a D in 1998 to a C- in 2000 and the number of states earning "honors" (A or B) rose from 6 to 15 (Munroe & Smith 2000, 18). The assumptions guiding this analysis was that there would be a high degree of correspondence between state geography standards and the 1994 publication of *Geography for Life:* N*ational Geography Standards*. Clearly, that was not the case as reflected in the data shown in Table 3.6.

Table 3.6. National Report Card. State Geography Standards (Data from Munroe and Smith 1998, 2000)

Grade	1998 N	2000 N
A	3	7
B	3	8
C	9	8
D	6	9
F	18	14
I	12	5

N= Number of states

In contrast to the empirical, comparison study, Bednarz (1997; 1998) conducted a qualitative grounded theory analysis of a sample of 13 state standards chosen upon student population. The research focused on four features: subject matter, expectations for geographic skills, level of performance expected of students, and the distribution of geographic learning. Major findings showed uneven quality in connection to *Geography for Life*, differing emphasis on topics, a tendency to be histo-centric, key components were missing, and place location is important. There was no commonality in the structure of the standards nor in the grade levels at which standards are established (Bednarz 1997; 1998, 85). Reflecting on her 1997 study and Munroe and Smith's 1998 study, Bednarz (1998) comments on three reasons why researching state standards is difficult. One the definition of "standards" varied among the states, something Anthamatten (2004) also found. Some states included just content standards while others included content standards associated with performance standards. Two, states determined whether standards were to be voluntary or mandatory in the curriculum (Bailey and Dixon 2007). And three, the political nature of developing standards is volatile (Bednarz 1998, 84; Bednarz, Heffron, and Solem 2014).

Further case study analysis by Bednarz (2003) clearly demonstrated that national geography standards were unevenly administered by geography teachers. At the time, Texas had ensured high quality geography education by incorporating *Geography for Life* into the state-mandated curricula, the Texas Essential Knowledge and Skills (TEKS) in Social Studies, which are aligned to high-stakes test and graduation requirements (Bednarz 2003). Bednarz found "little evidence of implementation of either the form or function of the National Geography Standards" when examining teacher awareness,

understanding and application of the standards (2003, 107). Even though teachers were given high quality standards for geography instruction, teacher adoption was minimal.

A comprehensive analysis of state geography standards conducted by Anthamatten (2004) reported on the status of the 49 states that had geography standards implemented by May 2004. Iowa is the lone state without any content standards in place. The results show that "geography is represented in some form in 48 states for the entire K-12 curriculum, though the depth and form of this representation varied enormously" (Anthamatten 2004, 183). Anthamatten categorized state standards into five possible outcomes: 1) geography is represented with a distinct set of standards; 2) geography is a strand combined with other disciplines; 3) some geography standards are contained as a strand within another disciplines' standards; 4) no specific standards for geography are represented; and 5) no social studies standards at all for the state. Forty-six states had a distinct set of geography standards. Three other states included geography as a strand within the standards for other disciplines. Twenty-eight states included a separate set of geography standards for all grade levels, but the majority of geography is represented in the middle grade level (Grade 6-9)" (Anthamatten 2004; 183). He concludes that the "comprehensiveness and quality of geography standards is not consistent between states. […] people in different states clearly have different ideas about the position of geography in the curriculum" (Anthamatten 2004; 183).

In general terms, *Geography for Life* was a "solid guide to what the leaders of the field believe young people should learn about", as opposed to the criticisms history and English national standards received (Finn 1998, v; Nash et al. 1997; Bednarz, Heffron, and Solem 2014). But the standard document was considered too long, over ambitious,

and awkwardly structured as noted by Finn, the president of the Fordham Foundation (Finn 1998, v). In addition to the research studies mentioned above (Bednarz 1997; Bednarz 1998; Monroe and Smith 1998; Munroe and Smith 2000; Bednarz 2003; Anthamatten 2004), a number of other studies reflected on the implementation of national geography standards into state standard frameworks (Gandy and Kruger 1994; Saxe et al. 1999; Boehm, Rutherford, and Foster 2003; Kenney 2004; Zam and Howard 2005; Bailey and Dixon 2007).

After realization that implementation of national geography standards was less than envisioned, Rutherford and Boehm (2004) reflect on the 1994 national standards writing process and offer seven recommendations for writers of a future revised edition that should help minimize problems of implementation and use by states and local school districts. They begin by noting that national geography standards "must fit as seamlessly as possible into state and local school district social studies curriculum frameworks" (Rutherford and Boehm 2004, 232). The first recommendation was that curricular alignment must be a central focus. The general model of standards-based education in education literature as seen in Figure 3.1 was not consulted in the development of *Geography for Life*¸1994. Their second recommendation was that each state is different and that standards should be tailored appropriately for each state (Rutherford and Boehm 2004, 234). Simple, jargon-free language is the third recommendation, since "complexity and length" was a downfall of the national standards. The fourth recommendation was to correlate standards to prominent curriculum models such as NCSS's *Expectations for Excellence* ten themes of social studies. Recommendations five through seven discuss the need for alignment in teacher learning materials, assessments, and textbooks.

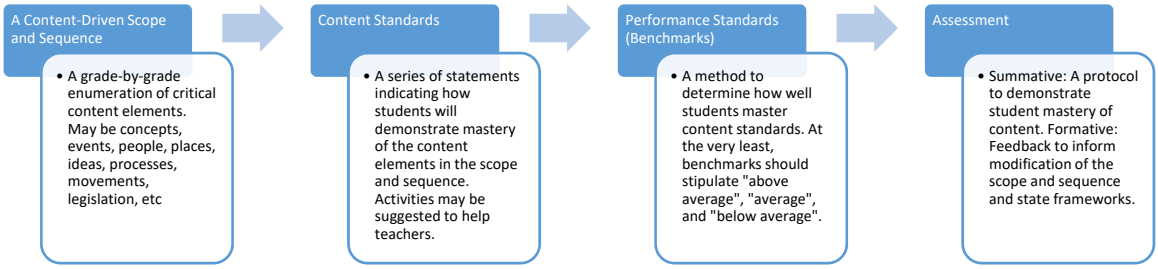


Figure 3.1. A model for standards-based education in the social studies. Modified from Rutherford & Boehm 2004.

In 2007, Bailey and Dixon developed an inclusion metric to determine how well the geography standards were included in state curriculum frameworks over a decade since being published. They looked at 1) which national geography standards were included in state curriculum frameworks and to what degree, and 2), was there a correlation between a high rank and grade for standards inclusion and mandatory versus voluntary curriculum frameworks adoption. Using a scoring system to determine incorporation of national geography standards into state standards at the middle school grade level (Grade 6-8), states were then graded based upon their total earned-point value (Table 3.7). They found that states have done a poor job of including geography in middle school curricula with only seven states receiving acceptable scores on the inclusion metric and not all standards were treated equally. Only five states incorporated 14 or more GFL standards. Three standards appeared less frequently: Standard 7 (The physical processes that shape the patterns of Earth's surface); Standard 12 (The processes, patterns, and functions of human settlements); and Standard 18 (How to apply geography to interpret the present and plan for the future) (Bailey and Dixon 2007, 120). And while, four states had a mandatory curriculum there was no statistical significance between this and their given rank of standards inclusion. They concluded that there was a

large gap between the national standards developed by university academic geographers and the desirable content filtered into K-12 state curriculum frameworks.

Table 3.7. Summary Statistics Inclusion of Content Standards with the Social Studies Frameworks (Bailey and Dixon 2007)

	A: 100.8 – 80.64	B: 80.63 – 60.48	C: 60.47 – 40.32	D: 40.31 – 20.16	F: < 20.16
# of States	1	6	19	15	8
Mean Score	84	66.4	48.13	28.64	12
Mean # of Standards Included	17	14.17	10.47	5.87	2.75

Note: Iowa and Rhode Island did not have state social studies frameworks for the middle school level at the time of the research. District of Columbia included.

Bednarz, Heffron and Solem (2014) remark that the 1994 national geography standards influenced the development of state social studies standards in states especially New York, Florida, Arizona, Indiana, and Texas, and, they were successfully incorporated into curriculum development projects, such as *Path toward World Literacy* (Grosvenor Center for Geographic Education 2001), Mission Geography, and the Partnership for 21st Century Skills. Because of the "successful adoption of *Geography for Life* by many states and school districts" the basic structure of the national geography standards remained the same when the revision process began in 2008 (Heffron 2012; Heffron and Downs 2012). The six essential elements stayed the same and only two of the 18 standards were updated to reflect new disciplinary knowledge: standard 1 and 8 (Bednarz, Heffron, and Solem 2014). Table 3.8 displays the 2012 revised edition of *Geography for Life: National Geography Standards* with emphasis added to the revised standards. In addition to updating the wording of two standards, the writing committee added three to four themes to organize specific content in each standard. Each theme

included 2-4 *knowledge statements*, which covered specific content that students must know and understand. Each knowledge statement was supported by 2-4 *performance statements* of what students should be able to do, followed by three examples of activities to demonstrate an understanding of the knowledge statements (Heffron and Downs 2012). The knowledge statements, performance statements, and activities differed from the 1994 version.

Table 3.8. ***Geography for Life: National Geography Standards, second edition*** **(Heffron and Downs 2012)**

Essential Element	Standard
1. THE WORLD IN SPATIAL TERMS	1. How to use maps and other geographic representations, *geospatial technologies, and spatial thinking to understand and communicate information*
	2. How to use mental maps to organize information about people, places, and environments in a spatial context
	3. How to analyze the spatial organization of people, places, and environments on Earth's surface
2. PLACES AND REGIONS	4. The physical and human characteristics of places
	5. That people create regions to interpret Earth's complexity
	6. How culture and experience influence people's perceptions of places and region
3. PHYSICAL SYSTEMS	7. The physical processes that shape the patterns of Earth's surface
	8. The characteristics and spatial distributions of ecosystems *and biomes* on Earth's surface
4. HUMAN SYSTEMS	9. The characteristics, distribution, and migration of human populations on Earth's surface
	10. The characteristics, distribution, and complexity of Earth's cultural mosaics
	11. The patterns and networks of economic interdependence on Earth's surface
	12. The processes, patterns, and functions of human settlement
	13. How the forces of cooperation and conflict among people influence the division and control of Earth's surface
5. ENVIRONMENT AND SOCIETY	14. How human actions modify the physical environment
	15. How physical systems affect human systems
	16. The changes that occur in the meaning, use, distribution, and importance of resources
6. THE USES OF GEOGRAPHY	17. How to apply geography to interpret the past
	18. How to apply geography to interpret the present and plan for the future

Curriculum Alignment and Systemic Reform

Theory of Systemic Reform

During hearings for America 2000, the theory of "systemic reform" was discussed. The central idea of systemic school reform is that greater alignment in policies of instructional guidance is the only way to create large numbers of effective schools (Smith and O'Day 1991; Clune 1998, 2). This means aligning multiple aspects of the education system such as instructional materials, standards, assessments, pre- and in-service teacher training, and resources with a heavy emphasis placed on the role of the states (Smith & O'Day, 1991). Clune agreed with Smith and O'Day in support of higher levels of alignment and that standards-based curriculum was the touchstone for policy alignment supporting active learning by students and teaching for understanding (Clune 1998). This type of thinking led to a theory of systematic reform developed during a National Science Foundation grant with nine case study states. The theory states that "systemic reform (SR), through its purposeful activities, leads to systemic policy (SP), which leads to a rigorous implemented curriculum (SC) for all students, which leads to measured high student achievement (SA) in the curriculum as taught" (Clune 1998, 2). If these steps as identified below are followed, the outcome would be a positive reform attempt. The system is dynamic and continuously adapting through a continuous causal sequence.

$$SR \rightarrow SP \rightarrow SC \rightarrow SA$$

What is Curriculum Alignment?

Fenwick English is recognized as a leader in the field of curriculum theory introducing the terms "curriculum alignment," "curriculum auditing," and "curriculum management" to school administrators and teachers in education (English and Steffy 2001; English 2010; Null 2017). His idea of curriculum alignment was practical and objective making it easily embraced by school officials and provided a prescribed plan for teachers to follow and teach. The prescribed plan would align to textbooks, standards, and assessments (English 1986/1987; English and Steffy 2001; English 2010).

Curriculum alignment is the congruence of three educational elements: curriculum (which is referred to as standards in this research; also known as 'the written' or the 'intended curriculum'), instruction (which is referred to as curriculum in this research; also known as 'the taught' or the 'enacted curriculum'), and assessment (the tested or the 'learned curriculum') (Savard and Cotton 1982; English 1986/1987; Leitzel and Vogler 1994; Blank, Porter, and Smithson 2001; English and Steffy 2001; English 2010). This way of organizing the power and influence of curriculum is commonly referred to as the "alignment triangle" as seen in Figure 3.2. Making sure that these three are aligned is important to assure a high level of student learning through a coherent educational system. Research shows that if the curriculum is aligned than student achievement improves (Squires 2005; 2009; 2012). Alignment can be measured between the categories, for example how the written aligns with the taught, and how the taught aligns with the tested. Therefore, if each of those links is aligned, then students are taught and assessed on the written ensuring a high and consistence level of education.

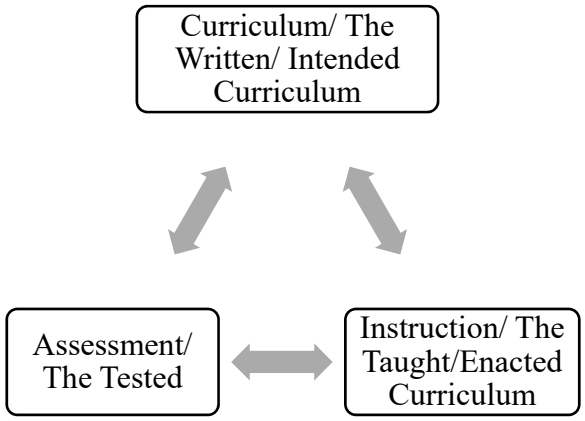


Figure 3.2. The Alignment Triangle

According to Webb (1997), alignment is "the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide the system toward students learning what they are expected to know and do" (Webb 1997, 4). In this statement "the system" that Webb refers to is the education system, which has numerous elements that must work together to create a strong aligned system. The elements are clustered into four different strata: purpose, policy, programs, and practice (Bybee 1995). Among the strata are two different ways to attain alignment: horizontal and vertical (Figure 3.3). This figure provides a representation for evaluating alignment among various elements of education and achieving systemic reform. For the standards-based reform to be successful, student outcomes should improve based upon the alignment of standards and assessments. Standards state what students should know and what they should be able to do with that knowledge; assessments are used to measure student achievement (Webb 1997). Alignment can improve the efficiency and effectiveness of the education system (Webb 1997, 10). Aligning other functions such as professional development, textbooks, and public support can also be effectively planned if the system is aligned thus making educational goals attainable.

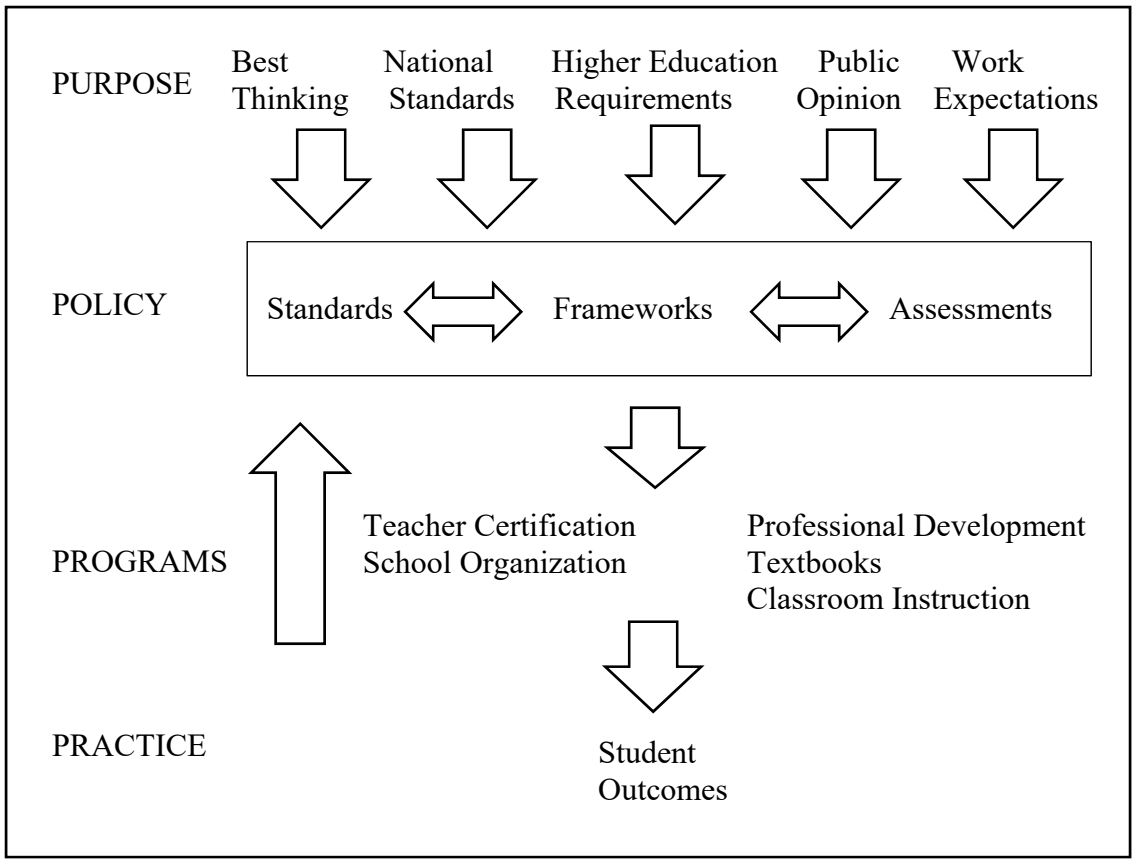


Figure 3.3. Vertical and Horizontal Alignment in an Education System (Webb, 1997).

Curriculum Alignment in Practice

After the standards-based reform movement began in the early 1990s, researchers studied the alignment of standards and assessments, specifically in the content area of mathematics, science, and English Language Arts. Webb (1997) notes that most states "lacked a formal and systematic process for determining the alignment among standards, frameworks, and assessments" (8). Up to this point, three general approaches for judging alignment were used by states and districts according to Webb (1997). The first was to develop documents sequentially, starting with standards, then curriculum frameworks, and lastly assessments. The second way was to hire expert reviewers. The third approach

is to systematically analyze both documents using a common metric, as done by the Third International Mathematics and Science Study.

Webb (1997), however, developed new criteria to judge alignment between standards and assessments in mathematics and science to "provide guidance on important aspects of expectations and assessments that need to be considered in some detail to have a coherent system" (Webb 1997, 8). The twelve criteria were grouped into five general categories: content focus, articulation across grade and ages, equity and fairness, pedagogical implications, and system applicability (Table 3.9). The criteria is intended to provide a means for thinking about alignment, presented to first consider content, then students, then instruction, and then application to a system (Webb 1997, 22).

Table 3.9. Webb's Alignment Criteria (1997)

1. Content Focus a. Categorical concurrence b. Depth of knowledge consistency c. Range of knowledge correspondence d. Structure of knowledge comparability e. Balance of representation f. Dispositional consonance
2. Articulation across Grades and Ages a. Cognitive soundness determine by best research and understanding b. Cumulative growth in content knowledge during students' schooling
3. Equity and Fairness
4. Pedagogical Implications a. Engagement of students and effective classroom practices b. Use of technology, materials, and tools
5. System Applicability

In a follow-up case study of four states, Webb (1999) only analyzed the content focus to judge the degree of alignment of math and science assessments and standards. The four criteria used were: categorical congruence, depth of knowledge consistency, range of knowledge correspondence, and balance of representation. The process produced

credible results creating a valid and reliable process for analyzing alignment among standards and assessments.

Webb (2002) also developed a 'depth-of-knowledge' alignment model, which over the years became the foundation for other approaches and models for aligning standards with assessments. His depth-of-knowledge model describes the cognitive demand required to perform tasks. There are four levels of cognitive demand for each subject area. Table 3.10 outlines the depth-of-knowledge levels for students in social studies.

Table 3.10. Webb's Depth-of-Knowledge in Social Studies

Level of Cognitive Demand	Cognitive Demand
1	Recall of Information
2	Basic Reasoning
3	Complex Reasoning
4	Extended Reasoning

La Marca, Redfield, and Winter (2000) wrote a guide to alignment that identified five general organizing principles to determine alignment within an educational system: content match, depth match, emphasis, performance match, and accessibility. Their review of various alignment methodologies highlighted a sample of how researchers up to that point have approached alignment using systematic procedures. Wixson (1999) used Webb's methodology on overall coverage and depth of match but emphasized the need to consider the state's history and experience in framework developments. Schmidt (1999) also followed a similar methodology as Webb but instead the reviewers coded either the assessment and/or standards, but were not responsible for matching the two.

Romberg and Wilson (1995) evaluated the alignment between six standardized mathematics tests to grades 5-8 NCTM standards. Their set of criteria included content,

process, and level of response. Sanford and Fabrizio (1999) evaluated the alignment between a state mandated math assessment in grade 8 and the NAEP assessment for math at grade 8. Their criteria were based upon technical, content, and cognitive demand. La Marca et al. (2000) found commonalities of the criteria used among the studies, which provides a guide for other alignment evaluations.

A 2009 report prepared for the Council of Chief State School Officers (CCSSO) and the U.S. Department of Education, National Center for Education Statistics (NCES) discussed three approaches to measure alignment of the National Assessment of Educational Progress (NAEP) to state assessments and standards (Vockley 2009). The NAEP Education Statistics Services Institute Procedural Manual is a "sequence of procedures for comparing NAEP frameworks, specifications, and assessment items to state frameworks and assessments. It features a decision tree with a series of questions that, together, create a decision-making tool for planning and conducting an alignment study" (Vockley 2009, 10). The Human Resources Research Organization Alignment model was developed to examine "similarities and differences between NAEP and state frameworks or standards and assessments in reading and math" (Vockley 2009, 23).

Another alignment model mentioned in Vockley's report is the Survey of Enacted Curriculum (SEC) Alignment model developed by Blank, Porter, and Smithson (2001) in conjunction with the Council of Chief State School Officers (CCSSO). SEC is designed to evaluate alignment between standards, assessments, and instruction. The SEC has been successfully tested to measure the alignment in mathematics, English language arts and reading, and science (Blank, Porter, and Smithson 2001; Porter 2002; Vockley 2009). The methodology uses three types of research-based instruments for measuring content

and alignment: 1) surveys of teachers, 2) content analysis of instructional materials, and 3) alignment indices describing the degree of overlap in content.

The purpose of these instruments is to develop a uniform language for describing content in a school academic subject making it easier to describe the degree of overlap. The uniform language, or taxonomy, is used to code standards and assessments into a two-dimensional content matrix: topic and cognitive demand. An example of a geography content matrix can be seen in Table 3.11. Topics are organized at two levels. The *general level* (coarse grain) identifies major topics in Social Studies such as "Places and Regions" or "Physical Geography" (Table 3.12). In table X the topics related to geography by the six essential elements are bolded, but topics such as "Human Culture", "Innovation and Cultural Change", and "Multicultural Diversity" are also geographic in nature. Within each general level are *specific topics* (fine grain). The specific topic taxonomy for the six general geography topics are seen in Table 3.13. A complete table of the K-12 social studies taxonomy is available in Appendix B. The cognitive demand identifies the expectations for student performance targeted by a given assessment item or standard. The cognitive demands are organized into five categories as seen in Table 3.14.

Table 3.11. Example of a Geography Content Matrix

Topic	Category of cognitive demand				
	Recall/ Memorize	Process Information/ Investigate	Demonstrate/ Apply Understanding	Analyze/ Hypothesize	Synthesize/ Evaluate/ Make Connections
Map Skills					
Places and Regions					
Physical Geography					
Human and Cultural Geography					
Human/ Environment Interactions					
The Uses of Geography					

Table 3.12. Grade K-12 Social Studies Taxonomy General Content Areas

Social Studies Skills	Psychology
Human Culture	Sociology
Innovation and Cultural Change	**Map Skills**
Multicultural Diversity	**Places and Regions**
Social Problems	**Physical Geography**
Foundations of Government	**Human and Cultural Geography**
Principles of American Democracy	**Human/Environment Interactions**
American Constitutionalism	**The Uses of Geography**
Political and Civic Engagement	State History
Limited Resources and Choice	US History (People, Events, and Documents)
How Markets Work	US History (Growth and Development)
Economic Systems	US History (Other Themes)
Economic Interdependence	World History (Pre-History)
Personal Finance	World History (Early Empires and Religions)
	World History (Emergence of the Global Age)

Table 3.13. Grade K-12 Social Studies Taxonomy for Geography Specific Levels

1500	**Map Skills**
1501	- Diagrams, graphs, models, maps, globes, and atlases
1502	- Photographs, aerial photos, and satellite imagery
1503	- Map properties (e.g., size, shape, distance, and direction)
1504	- Map elements (e.g., title, scale, symbols, and legend)
1505	- Direction (e.g., cardinal points, magnetic, and polar)
1506	- Location (e.g., latitude, longitude, absolute, and relative)
1507	- Location of features on earth (e.g., continents, countries, states, cities, mountains, oceans, rivers)
1508	- Spatial organization (e.g., pattern, hierarchy, distribution, linkage, and accessibility)
1509	- Movement and spatial interaction
1510	- Mental map (creation and use of)
1511	- Geospatial technologies (e.g., geographic information systems and global positioning systems)
1600	**Places and Regions**
1601	- Physical characteristics of places in the U.S. and the world
1602	- Human characteristics of places in the U.S. and the world
1603	- Place creation (e.g., meaning and social relations)
1604	- Place and identity (e.g., personal, community, ethnic, national, regional, and global)
1605	- The concept of regions and regionalization
1606	- Types of regions (formal, functional, and perceptual)
1607	- The influence of culture and experience on people's perceptions of places and regions
1700	**Physical Geography**
1701	- Climate, world climate regions, and major biomes
1702	- Earth/sun relationships and the seasons
1703	- Weather and weather systems
1704	- Formation of and change to landforms
1705	- The hydrologic cycle (i.e., water cycle)
1706	- The oceans
1707	- Ecosystems and ecological processes (e.g., global warming and energy)
1708	- Physical systems
1800	**Human and Cultural Geography**
1801	- Population
1802	- Migration
1803	- Economic processes and systems
1804	- Transportation and communication networks
1805	- Trade and movement of ideas

Table 3.13. Continued. Grade K-12 Social Studies Taxonomy for Geography Specific Levels

1806	- Human settlements and urban systems
1807	- Conflict and cooperation over territory
1808	- Geo-political systems and interactions
1809	- Cultural landscape (e.g., religion, ethnicity, and language)
1810	- Locations and characteristics of major culture groups of the world
1900	**Human/Environmental Interactions**
1901	- Human modification of, and adaptation to, the physical environment
1902	- Carrying capacity of environmental systems
1903	- Resources and energy use
1904	- Pollution and environmental problems
1905	- Natural hazards and disasters (e.g., hurricanes, earthquakes, and floods)
2000	**The Uses of Geography**
2001	- The spatial perspective
2002	- The ecological perspective
2003	- Interpreting the past and present
2004	- Forecasting and planning for the future
2005	- Identifying and solving problems
2006	- Connecting self and the world from local to global scales
2007	- Patterns of change

Table 3.14. Expectation for Students in Social Studies

Level	Cognitive Demand	
1	**Recall/ Memorize**	
	-Name, identify, list, recognize, and label	-Locate features on a map
	-Recall facts, terms and definitions	-Identify people, places, events, and dates
2	**Process Information/ Investigate**	
	-Make Observations	-Display data in tables or charts
	-Locate and collect information and data	-Summarize, classify, and organize data
	-Read, decode, and interpret maps/graphics	-Paraphrase, convert, and translate information
	-Conduct interviews and fieldwork	
	-Use data collection tools and procedures	-Generate questions
3	**Demonstrate/ Apply Understanding**	
	-Describe, explain social studies issues/problems	-Recognize and explain misconceptions
		-Explain the reasoning in making decisions
	-Explain procedures and methods of inquiry	-Design effective displays of information/data
4	**Analyze/Hypothesize**	
	-Classify and compare data	-Identify bias, points of view, frame of reference
	-Process and interpret data	
	-Analyze data and recognize patterns and relationships	-Make predictions
5	**Synthesize/ Evaluate/ Make Connections**	
	-Propose or evaluate solutions to social problems	-Make decisions and form judgements
		-Develop new hypotheses
	-Use social studies concepts to solve problems	-Assess accuracy, credibility, and relevance
	-Infer from data and draw conclusions	-Plan effective research strategies
	-Use multiple sources to make connections	

The SEC model determines for each standard, the content topic and cognitive demand. These data are incorporated into the content matrix as a proportion of 1 (Porter and Smithson 2001). Completed content matrices are mapped to one another (e.g. assessment to assessment or assessment to standard) using the SEC alignment indices (Porter 2002). The results show the degree of consistency through an alignment statistic where 0 equals no alignment and 1 equals perfect alignment.

One way to represent the match between frameworks is visually with a content map. The content map shows what content by cognitive demand is (or is not) included in the framework. It visually displays similarities and differences. Figure 3.4 shows the two different ways content maps are displayed. There is "coarse-grain" which shows alignment of the main topics and expectations between two frameworks. It can also show "fine-grain" comparisons of the alignment of specific topics.

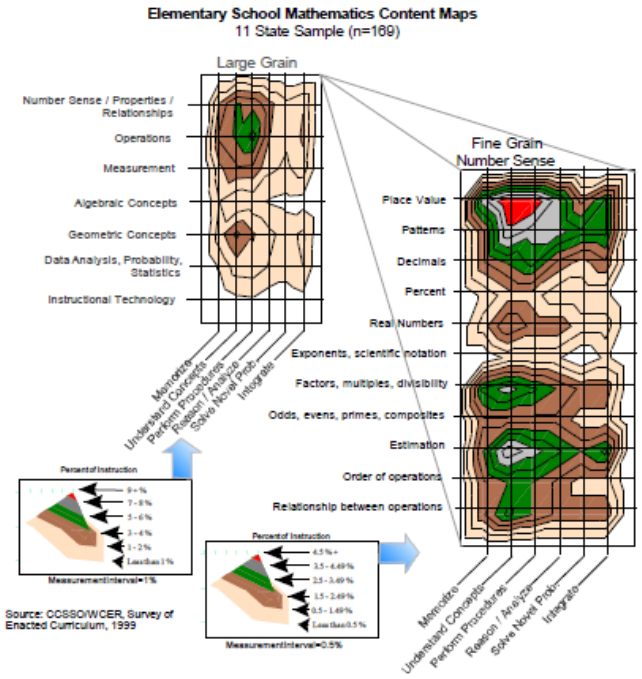


Figure 3.4. "Coarse-grain" versus "Fine-grain" Content Map in Elementary Mathematics

Figure 3.5 shows an example of content maps in mathematics comparing two states frameworks. For example, in Figure 3.5, School A emphasizes "Algebraic Concepts" at high levels of cognitive demand, as compared to School B, which emphasizes "Algebraic Concepts" to only an understanding cognitive demand at which point both schools are aligned. Both schools neglect "Instructional Technology" aside from a small amount of understanding in School A.

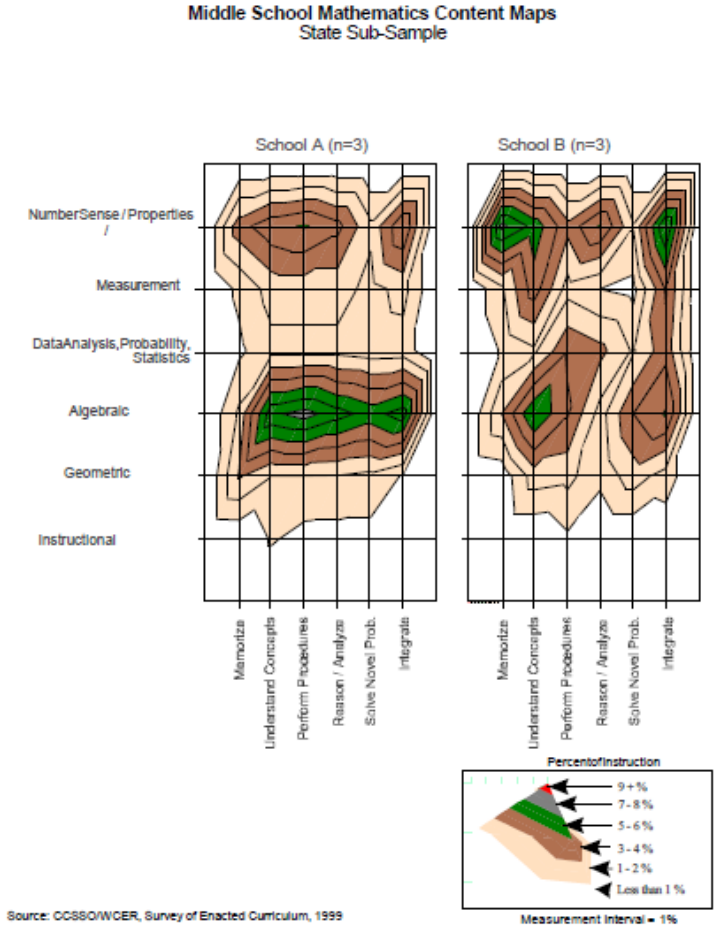


Figure 3.5. Coarse Grain Content Maps in Mathematics

It is clear that alignment is an important component in assuring an effective educational program, no matter what the subject matter emphasis. There has been a critical need for alignment research addressing the relationships between curricular and

assessment elements in the realm of K-12 geography teaching and learning, on a state-by-state basis. Even though this study focuses only on the alignment of national curriculum standards and state standards, it provides the foundation for future alignment studies including national and state geography assessments.

This study will depend upon, methodologically, the Survey of Enacted Curriculum (SEC) (Blank, Porter, and Smithson 2001) to measure the degree of alignment among and within geography education in nineteen selected states. Such evidence should encourage sensible future planning in geography education, including guidance for producing future national and state standards.

CHAPTER IV

RESEARCH QUESTION

The following research question guides this study to identify the degree of vertical alignment between *Geography for Life, National Geography Standards* 2nd edition (2012) and geography portions of social studies standards in a selected sample of states that have revised their curriculum frameworks since 2014.

Research Question:

How effective have national geography standards been during the standards-based reform movement in geography education, as measured by the vertical alignment of curriculum standards in *Geography for Life* (2nd edition, 2012) with a selected sample of social studies frameworks found in 19 states in which curricular framework revision took place during the time period 2014 - 2017.

Assumption

An assumption within this research is that standards in both or either edition (1994, 2012) of *Geography for Life* represent national standards in geography. States may have adopted standards language from either version. Both reflect national standards and both provide a solid basis for measuring geography's penetration into the education fabric of certain selected states.

CHAPTER V

METHODS

Research Design

For this study, the Survey of Enacted Curriculum (SEC) Alignment model (Blank, Porter, and Smithson 2001), a quantitative research design, was implemented using content analysis to address the research question. As defined by Krippendorff (1980), content analysis is "a research technique for making replicable and valid references from data to their context" (p. 21). Content analysis should be flexible and replicable so that several researchers can apply the same technique to the data set and expect to get similar results (Krippendorff 1980; 2004; Cavanagh 1997; Hsieh and Shannon 2005). The goal of content analysis is "to provide knowledge and understanding of the phenomenon under study" (Downe-Wamboldt 1992, 314; Hsiehn and Shannon 2005). Content analysis can be both a qualitative or quantitative research method depending on how the data are analyzed. This research study followed a quantitative content analysis approach characterized by coding text data (national and state standards) into explicit categories and then using statistics to describe the data. This is also referred to as "quantitative analysis of qualitative data" (Morgan 1993; Hsieh and Shannon 2005).

The purpose of this study is to measure the degree of vertical alignment between the 2012 revised edition of national geography standards and geography strands in the social studies standards of a sample of nineteen states (Figure 5.1). Drawing from Webb's model of vertical and horizontal alignment in the education system, national standards provide the "purpose", in this case, the content knowledge and skills of geography. The state social studies frameworks then become "policy" as states

implement the standards. In an ideal educational system, the "purpose" would inform the "policy". A content analysis of official documents provided the researcher with the "official perspective" (Bogdan and Biklen 2007). A conceptual framework of the content analysis design is seen in Figure 5.2. It shows that the analyst relies on available texts to answer a research question with a given context. According to Krippendorff (2004), "texts acquire significance in the contexts of their use" and "the context explains what the analysts does with the texts" (33). The context of this study is to determine how effective the standards-based reform movement was as measured through curriculum alignment. In this case, alignment is defined as the proportion of content of the national geography standards that matches the geography portions of the state social studies standards. Content analysis used in this manner offers an accurate depiction of the shared expectations represented in the national geography standards and those of the individual states.

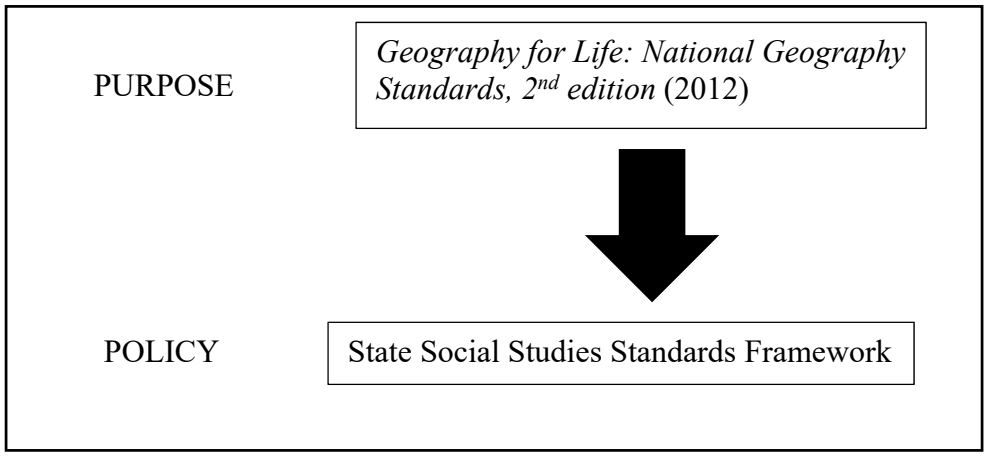


Figure 5.1. Vertical Alignment within the Geography and Social Studies Education System

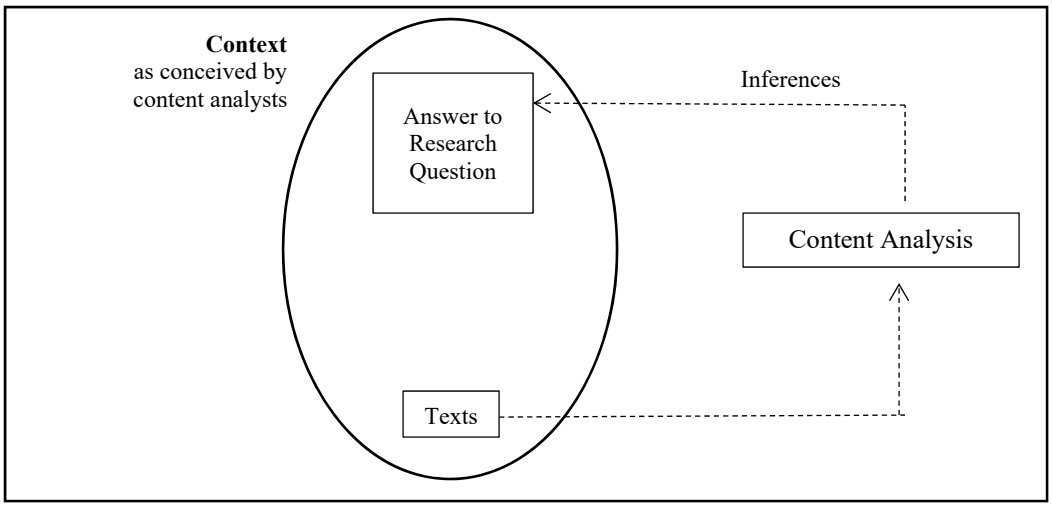


Figure 5.2. Conceptual Framework of a Content Analysis Design (Krippendorff 2004, 82)

The national geography standards began in 1994 with six essential elements and eighteen standards. *Geography for Life* also included *knowledge statements* that accompanied each of the 18 standards. The knowledge statements explained exactly what the student should know and understand. In addition, each knowledge statement included *performance statements* that indicate what the student should be able to do based on that knowledge. Each document then provided example activities that teachers could use in the classroom to help students demonstrate their knowledge.

When national geography standards were revised from 1994 to 2012, the language of the standards changed somewhat to reflect new disciplinary knowledge (Bednarz, Heffron, and Solem 2015; Heffron 2012). It is important to note that *Geography for Life* 2012 does include a revised set of knowledge statements, performance statements, and activities for each standard. Therefore, even though the standards titles remained practically the same, the rest of the national geography standards document reflects the best new thinking of curriculum scholars in the discipline. This provides the reason for using only the revised edition of the national geography standards for this alignment

study. The revision process took the geography education writing committee months of extensive work sessions to publish the best geographic knowledge and skills students should attain at grades four, eight and twelve in the form of standards, knowledge statements, and performance statements. Hence, it is of value to determine the degree to which states have relied on these national standards, knowledge and performance statements when writing their own specific set of geography standards. In order to measure this alignment between *Geography for Life: National Geography Standards, second edition* and the geography portions of state social studies standard frameworks the Survey of Enacted Curriculum (SEC) Alignment Model (Blank, Porter and Smithson 2001; Porter 2002) was used.

Developed and revised over the years by Porter, Smithson, Blank and others since 2001, the Survey of Enacted Curriculum (SEC) is a nationally recognized content analysis procedure (Porter, McMaken, Hwang, and Yang 2011). SEC has been used extensively in aligning standards and assessments in math and English Language Arts and Reading (ELAR) at both the national and state level. This has made the SEC a comprehensive alignment model available in research with the ability to align the three major components in the education system (standards, curriculum, and assessment).

A content analysis of texts requires the process of coding the text to create data for the analysis. This is called "data making- creating computable data from raw or unedited texts" (Krippendorff 2004, 83). Codes can be pre-determined, made-up during the analysis, or a mixture of both depending on the research. The SEC developed a taxonomy for each subject area (mathematics, ELAR, science, and social studies) in order to code curricular frameworks efficiently and determine alignment. For this study, the

social studies taxonomy was used, specifically, the geography portion of the taxonomy (Table 5.1). The geography portion was identified as these six general content areas: map skills, places and regions, physical geography, human and cultural geography, human/environmental interactions, and the uses of geography. These general content areas correspond to the essential elements found in *Geography for Life* (1994, 2012). Within these general content areas are specific topics representative of the fine grain knowledge within a general content area (Table 5.2). Curricular frameworks are also coded by cognitive demand or expectations for student performance. In the SEC, there are five levels of cognitive demands specific to social studies. They are shown in Table 5.3.

Table 5.1. Grade K-12 Social Studies Taxonomy General Content Areas

Social Studies Skills	Psychology
Human Culture	Sociology
Innovation and Cultural Change	**Map Skills**
Multicultural Diversity	**Places and Regions**
Social Problems	**Physical Geography**
Foundations of Government	**Human and Cultural Geography**
Principles of American Democracy	**Human/Environment Interactions**
American Constitutionalism	**The Uses of Geography**
Political and Civic Engagement	State History
Limited Resources and Choice	US History (People, Events, and Documents)
How Markets Work	US History (Growth and Development)
Economic Systems	US History (Other Themes)
Economic Interdependence	World History (Pre-History)
Personal Finance	World History (Early Empires and Religions)
	World History (Emergence of the Global Age)

Table 5.2. Grade K-12 Social Studies Taxonomy for Geography Specific Levels

1500	**Map Skills**
1501	- Diagrams, graphs, models, maps, globes, and atlases
1502	- Photographs, aerial photos, and satellite imagery
1503	- Map properties (e.g., size, shape, distance, and direction)
1504	- Map elements (e.g., title, scale, symbols, and legend)
1505	- Direction (e.g., cardinal points, magnetic, and polar)
1506	- Location (e.g., latitude, longitude, absolute, and relative)
1507	- Location of features on earth (e.g., continents, countries, states, cities, mountains, oceans, rivers)
1508	- Spatial organization (e.g., pattern, hierarchy, distribution, linkage, and accessibility)
1509	- Movement and spatial interaction
1510	- Mental map (creation and use of)
1511	- Geospatial technologies (e.g., geographic information systems and global positioning systems)
1600	**Places and Regions**
1601	- Physical characteristics of places in the U.S. and the world
1602	- Human characteristics of places in the U.S. and the world
1603	- Place creation (e.g., meaning and social relations)
1604	- Place and identity (e.g., personal, community, ethnic, national, regional, and global)
1605	- The concept of regions and regionalization
1606	- Types of regions (formal, functional, and perceptual)
1607	- The influence of culture and experience on people's perceptions of places and regions
1700	**Physical Geography**
1701	- Climate, world climate regions, and major biomes
1702	- Earth/sun relationships and the seasons
1703	- Weather and weather systems
1704	- Formation of and change to landforms
1705	- The hydrologic cycle (i.e., water cycle)
1706	- The oceans
1707	- Ecosystems and ecological processes (e.g., global warming and energy)
1708	- Physical systems
1800	**Human and Cultural Geography**
1801	- Population
1802	- Migration
1803	- Economic processes and systems
1804	- Transportation and communication networks
1805	- Trade and movement of ideas
1806	- Human settlements and urban systems
1807	- Conflict and cooperation over territory
1808	- Geo-political systems and interactions
1809	- Cultural landscape (e.g., religion, ethnicity, and language)
1810	- Locations and characteristics of major culture groups of the world
1900	**Human/Environmental Interactions**
1901	- Human modification of, and adaptation to, the physical environment
1902	- Carrying capacity of environmental systems
1903	- Resources and energy use
1904	- Pollution and environmental problems
1905	- Natural hazards and disasters (e.g., hurricanes, earthquakes, and floods)
2000	**The Uses of Geography**
2001	- The spatial perspective
2002	- The ecological perspective
2003	- Interpreting the past and present
2004	- Forecasting and planning for the future
2005	- Identifying and solving problems
2006	- Connecting self and the world from local to global scales
2007	- Patterns of change

Table 5.3. Expectation for Students in Social Studies

Level	Cognitive Demand	
1	**Recall/ Memorize (B)**	
	-Name, identify, list, recognize, and label	-Locate features on a map
	-Recall facts, terms and definitions	-Identify people, places, events, and dates
2	**Process Information/ Investigate (C)**	
	-Make observations	-Display data in tables or charts
	-Locate and collect information and data	-Summarize, classify, and organize data
	-Read, decode, and interpret maps/graphics	-Paraphrase, convert, and translate information
	-Conduct interviews and fieldwork	
	-Use data collection tools and procedures	-Generate questions
3	**Demonstrate/ Apply Understanding (D)**	
	-Describe, explain social studies issues/problems	-Explain the reasoning in making decisions
	-Explain procedures and methods of inquiry	-Design effective displays of information/data
	-Recognize and explain misconceptions	
4	**Analyze/Hypothesize (E)**	
	-Classify and compare data	-Identify bias, points of view, frame of reference
	-Process and interpret data	
	-Analyze data and recognize patterns and relationships	-Make predictions
5	**Synthesize/ Evaluate/ Make Connections (F)**	
	-Propose or evaluate solutions to social problems	-Make decisions and form judgements
		-Develop new hypotheses
	-Use social studies concepts to solve problems	-Assess accuracy, credibility, and relevance
	-Infer from data and draw conclusions	
	-Use multiple sources to make connections	-Plan effective research strategies

Ideally there should be three to five content analysts to provide a high degree of reliability of the content analysis. However, due to personnel restraints, only two were used for this study. Krippendorff (2001) states that the coders "must have the necessary cognitive abilities, […] appropriate backgrounds [and] In addition, the qualifications […] must be shared by a sufficiently large population of potential coders" (127). At the time the content analyses took place, an independent Ph.D. student in geography education became locally available and accessible. This individual has a very similar professional background to the researcher, having a graduate degree in geography, pursuing a doctorate in geography education, and a research focus on the teaching and learning of geography education. Both coders are at the same point professionally as early career scholars and have an extensive knowledge of geography. It would have been far more

difficult to rely on senior geographic educators to code because of the differences in qualifications. In addition, having the two content analysts in the same vicinity provided a situation that likely strengthened the reliability and validity of the content analysis. Since training the coder is a critical component of content analysis, having the coder locally allowed for a detailed training session.

Porter, Polikoff, Zeidner, and Smithson (2008) investigated the quality of content analyses by using the generalizability theory to determine the number of raters necessary for strong reliability. Their research found that reliability for four coders was good yielding coefficients greater than .80, but the generalizability coefficients showed only a .10 decline from four to two coders. Despite the decline, coefficients were still in the .70 to .80 range producing reliable results.

The two individuals coded *Geography for Life: National Geography Standards, second edition* (2012) and the 19 state social studies standards using a coding sheet (Figure 5.3a). Each standard was coded on the two-dimensional taxonomy of topic by student expectations. The rater codes the standard first by identifying the specific topic(s) it addresses (Figure 5.3b). Each topic is assigned a four-digit number as seen in Table 5.2. Then using the specific topic, the rater codes the cognitive demand expected from students (Figure 5.3c). The cognitive levels are coded from B-F as shown in Table 5.3. The topic code and expectations code combined create a content code as shown in Figure 5.3d. Each standard must correspond to at least one content code, and, perhaps as many as six. SEC determined that six was the limit of combination codes for standards, and if the item was so complex to suggest more than six, the most dominant elements should be used.

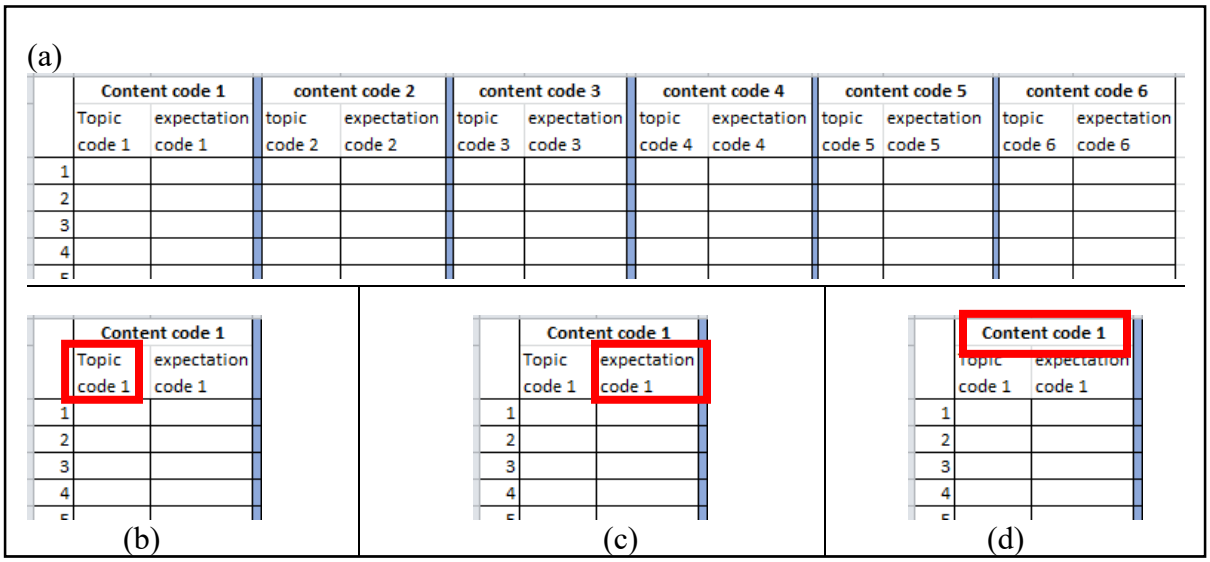


Figure 5.3. (a) Coding Sheet; (b) First step is to code the Topic Code; (c) Second step is to code the student expectation/cognitive demand; (d) The combination of the two-dimensional taxonomy creates a content code.

The codes were then placed in a content matrix based on the two dimensions: topic and student expectations. There are 48 specific topics for geography and five cognitive levels yielding 240 distinct types of content represented in the content matrix (Table 5.4). The coders placed each content code from the coding sheet into one or more cells, and the data were then converted into proportions averaged across the two content analysts.

Table 5.4. Example of Geography Content Matrix

Topic	Category of cognitive demand				
	Recall/ Memorize	Process Information/ Investigate	Demonstrate/ Apply Understanding	Analyze/ Hypothesize	Synthesize/ Evaluate/ Make Connections
Population					
Migration					
The oceans					
Physical systems					

Since the "content analyses produce data of proportions in a content matrix, measuring the alignment becomes a question of the extent to which the proportions in one content matrix match the proportions in another content matrix" using an alignment index (Porter 2002, 5). This allows us to see the emphasis of geographic content embedded within the standards and compare across different standard documents. The alignment index used is,

$$Alignment\ Index = 1 - \frac{\sum|x - y|}{2}$$

where *X* denotes cell proportions in one matrix and *Y* denotes cell proportions in another matrix, alignment ranges from 0.0 (no alignment) to 1.0 (perfect alignment). An example of what the content matrices would look like in order to measure alignment is seen in Figure 5.5 where the national standards represents X in the formula and the state A standards represents Y. Reliability of the content analyses has been strong for content standards (Porter 2002; Porter, Polikoff, Zeidner, and Smithson 2008; Porter, Polikoff, and Smithson 2009; Polikoff, Porter, and Smithson 2011; Porter, McMaken, Hwang, and Yang 2011; Polikoff and Porter 2014). Using the SEC approach, alignment between the national geography standards and state social studies standards has been displayed in tabular form and visually with content maps.

	National Standards					State A Standards				
TOPICS										
Population	.2	0	.1	0	0	.1	0	0	0	.1
Migration	.1	.1	0	0	.1	0	.1	0	.2	0
The oceans	0	0	.1	0	.1	0	0	.1	.2	.1
Physical systems	0	.1	.1	0	0	0	0	.1	0	0
	I	II	III	IV	V	I	II	III	IV	V
	COGNITIVE DEMAND									

Figure 5.5. Example matrices to measure alignment. (Porter 2002)

Data Collection

The data of the content analyses were the grade four and grade eight standards from *Geography for Life: National Geography Standards*, second edition (2012) and state social studies standards that were adopted in 2014 to 2017 in 19 states. This ensures that the second edition of *Geography for Life*, *National Geography Standards* was publicly available during the revision process for state revision committees to access. The sample includes the 19 states identified in Table 5.5.

Table 5.5. Sample of 19 State Social Studies Standards revised between 2014-2017

State	Last Revised	Title of Standards Framework
Arkansas	2014	*Social Studies Curriculum Framework*
Connecticut	2015	*Connecticut Elementary and Secondary Social Studies Framework*
Delaware	2016	*Social Studies Standards*
Florida	2014	*C-PALMS Social Studies Standards*
Georgia	2016	*Social Studies Georgia Standards of Excellence*
Idaho	2016	*Idaho Content Standards Social Studies*
Illinois	2017	*Illinois Social Science Standards*
Indiana	2014	*Indiana Academic Standards and Resource Guide*
Iowa	2017	*Iowa Social Studies Standards*
Kentucky	2015	*Kentucky Academic Standards – Social Studies*
Maryland	2015	*Maryland State Social Studies Standards and Framework*
Missouri	2016	*Missouri Learning Standards: Grade- Level-Expectations for Social Studies*
Nevada	2017	*Nevada Academic Content Standards for Social Studies*
New Jersey	2014	*New Jersey Student Learning Standards for Social Studies*
South Dakota	2015	*South Dakota Social Studies Content Standards*
Utah	2017 (Gr.7-12)	*Utah Core State Standards for Social Studies*
Virginia	2015	*History and Social Science Standards for Learning for Virginia Public Schools*
West Virginia	2016	*West Virginia College and Career Readiness Standards for Social Studies*
Wyoming	2014	*2014 Wyoming Social Studies Content and Performance Standards*

The national geography standards were retrieved by ordering a hard copy from National Geographic Society. There is no online version of the national geography standards that display the standards in the same format as the hard copy. The states' standard documents were retrieved by visiting the state's Department of Education website and searching for 'social studies standards'. Every state has content standards available online. To ensure that these were the most up-to-date standard frameworks, the social studies consultant was contacted to verify that the document was current.

Standard Framework Organization

Each state organizes their social studies standards differently. A careful interpretation of state social studies standards was necessary since each state includes unique standard requirements. In some cases, grade level expectations vary from state to state. Described below are the grade level standards are written at and the theme/curriculum topic for each grade (if identified in the document) for the state standard frameworks analyzed in this study. The bolded grade levels are the standards coded for the analysis.

Arkansas: Kindergarten Social Studies; Grade 1 Social Studies; Grade 2 Social Studies; Grade 3 Social Studies; **Grade 4 Social Studies**; Grade 5 Social Studies; Grade 6 Social Studies; **Grade 7 Social Studies** (Geography); Grade 8 Social Studies (U.S. History 1800-1900)

Connecticut: Kindergarten (Social Studies: Me and My Community); Grade 1 (Social Studies: Society and Ourselves); Grade 2 (Social Studies: Making a Difference); Grade 3 (Connecticut and Local History); **Grade 4** (U.S. Geography); Grade 5 (Early

U.S. History); **Grade 6** (World Regional Studies: the West); **Grade 7** (World Regional Studies: the East); Grade 8 (U.S. History)

Delaware: Grade K-3; **Grade 4-5**; **Grade 6-8**

Florida: Kindergarten; Grade 1; Grade 2; **Grade 3**; **Grade 4**; Grade 5; **Grade 6**; **Grade 7**; **Grade 8**

Georgia: Kindergarten (Foundations of America); Grade 1 (Our American Heritage); Grade 2 (Georgia, My State); Grade 3 (U.S. History Year 1); **Grade 4** (U.S. History Year 2); Grade 5 (U.S. History Year 3); **Grade 6** (Latin America, the Caribbean and Canada, Europe, and Australia); **Grade 7** (Africa, Southwest Asia (Middle East), Southern and Eastern Asia); **Grade 8** (Georgia Studies)

Idaho: Kindergarten; Grade 1; Grade 2; Grade 3; **Grade 4**; Grade 5; **Grade 6-9** (**Geography- Western Hemisphere**; **Geography- Eastern Hemisphere**; World History and Civilization); Grade 6-12 (U.S. History I)

Illinois: Kindergarten (My Social World); Grade 1 (Living, Learning, and Working Together); Grade 2 (Families, Neighborhoods, and Communities); Grade 3 (Communities Near and Far); **Grade 4** (Our State, Our Nation); Grade 5 (Our Nation, Our World); **Grade 6-8** (banded by complexity not grade level – Less Complex, Moderately Complex, More Complex)

Indiana: Kindergarten; Grade 1; Grade 2; Grade 3; **Grade 4**; Grade 5; **Grade 6**; **Grade 7**; **Grade 8**

Iowa: Kindergarten (Spaces and Places); Grade 1 (Communities and Culture); Grade 2 (Choices and Consequences); Grade 3 (Immigration and Migration); **Grade 4** (Change and Continuity); Grade 5 (Rights and Responsibilities); **Grade 6** (World

Regions and Cultures); **Grade 7** (Contemporary Global Studies); **Grade 8** (U.S. History and Civic Ideals)

Kentucky: Grade K-3; **Grade 4**; Grade 5; **Grade 6** (World Geography focus); Grade 7 (World History focus); **Grade 8** (U.S. History focus)

Maryland: Kindergarten; Grade 1; Grade 2; Grade 3; **Grade 4**; Grade 5; Grade 6; Grade 7; **Grade 8**

Missouri: Kindergarten, Grade 1; Grade 2; Grade 3; **Grade 4**; Grade 5; **Grade 6-8** (American History; World History; Geography)

Nevada: Kindergarten (Building Community – Learning and Working Together); Grade 1 (The Community We Live in and the World We Do); Grade 2 (Our National Identity and Culture); Grade 3 (Movement Around Our World); **Grade 4** (Nevada: Past and Present); Grade 5 (U.S. – Creating a New Nation); **Grade 6-8** (Early World Civilization prior to 1500; **World Geography and Global Studies**; Early U.S. History and Civic Ideals; Financial Literacy)

New Jersey: Kindergarten, Grade 1; Grade 2; Grade 3; **Grade 4**; Grade 5; Grade 6; Grade 7; **Grade 8**

South Dakota: Kindergarten; Grade 1; Grade 2; Grade 3; **Grade 4**; Grade 5; Grade 6; **Grade 7**; Grade 8

Utah: **Grade 7** (Utah Studies); Grade 8 (U.S. History I)

Virginia: Kindergarten (Focus of the Community); Grade 1 (Focus on the Commonwealth of Virginia); Grade 2 (Focus on U.S.); Grade 3 (Focus on Ancient World Cultures); **Virginia Studies**; U.S History to 1865; U.S. History 1865 to Present; Civics and Economics; **World Geography**

West Virginia: Grade K; Grade 1; Grade 2; **Grade 3**; **Grade 4**; Grade 5; Grade 6; Grade 7; **Grade 8**

Wyoming: Grade K-2; Grade 3-**5**; Grade 6-**8**

CHAPTER VI

ANALYSIS

The research question for this study is "How effective have national geography standards been during the standards-based reform movement in geography education, as measured by the vertical alignment of curriculum standards in *Geography for Life* (2nd edition, 2012) with a selected sample of social studies frameworks found in 19 states in which curricular framework revision took place during the period 2014 – 2017". To answer this question, the Survey of Enacted Curriculum (SEC) model was used to code and determine the level of alignment between knowledge statements in *Geography for Life* (2012) and similar content requirements found in 19 state social studies standards. Once these matters were determined it was possible to draw conclusions with respect to the influence of national standards in geography (1994, 2012) on geographic learning in U.S. schools.

Coding Social Studies Standard Frameworks

The first step was a content comparison of the geography portion of 19 state social studies standard frameworks and the knowledge statements found for each of the 18 national geography standards. These curricular documents were compared using a coding system at Grade 4 and Grade 8 (or a similar grade based upon specific content themes/courses identified within the standards) by two raters. The validity of the process of using two coders to measure alignment is discussed in the methodology section of this study.

Each standard (both geography portions in the state social studies and *Geography for Life* 2012) was coded on the two-dimensional taxonomy of content topics by student expectations using the pre-determined SEC social studies taxonomy (Table 6.1, 6.2 and 6.3). Coding of the content material in the state and national geography standards took place at the deepest level of knowledge identified in the document. In the case of the 18 national geography standards in *Geography for Life* (which are the same for Grade 4, 8 and 12), it was possible to use 2-4 knowledge statements related to each standard to gauge the depth and breadth of content covered by *Geography for Life* (2012). This yielded a total of 54 entries for the Grade 4 benchmark and 55 entries for the Grade 8 benchmark. A benchmark is the accumulation of knowledge the curriculum requires for students to achieve by the end of a certain grade level. Using the concept of scaffolding, the Grade 4 benchmark signifies what K-4 students should know and be able to do by the end of Grade 4. The Grade 8 benchmark states what students should know and be able to do by the end of Grade 8.

To demonstrate the coding process national geography standard 5 states: "*that people create regions to interpret Earth's complexity*". At the Grade 4 benchmark, there is one knowledge statement: "*regions are areas of Earth's surface with unifying physical and/or human characteristics*". The first step in the coding procedure is to read the knowledge statement and then using the codes in Table 6.1 to determine the correct topic code. Topic code 1601 (physical characteristics of places in the U.S and the world) fits this knowledge statement and is placed in line 1of the coding sheet as seen in Figure 6.1a under 'topic code 1'. Each knowledge statement can be coded up to six times, so other topic codes for this knowledge statement would include 1602 (human characteristics of

places in the U.S and the world) and 1605 (the concept of regions and regionalization) (see Table 6.1).

The next step in the coding procedure is the 'Student Expectation code 1' (see Table 6.2) which is determined by looking at the performance statements that follow each knowledge statement. In the case of Grade 4 standard 5, the performance statement asks students to: "*describe the distinguishing characteristics and meanings of several different regions*". The verb 'describe' would suggest cognitive expectation level 3 or code D for 'demonstrate/apply understanding' (see Table 6.2). This code is placed into the coding sheet as shown in Figure 6.1b. The follow-up activities listed underneath the performance statement include the verbs 'identify' and 'describe'. Therefore, the complete coded entry for Grade 4 standard 5 has a total of five content codes as seen in Figure 6.1c.

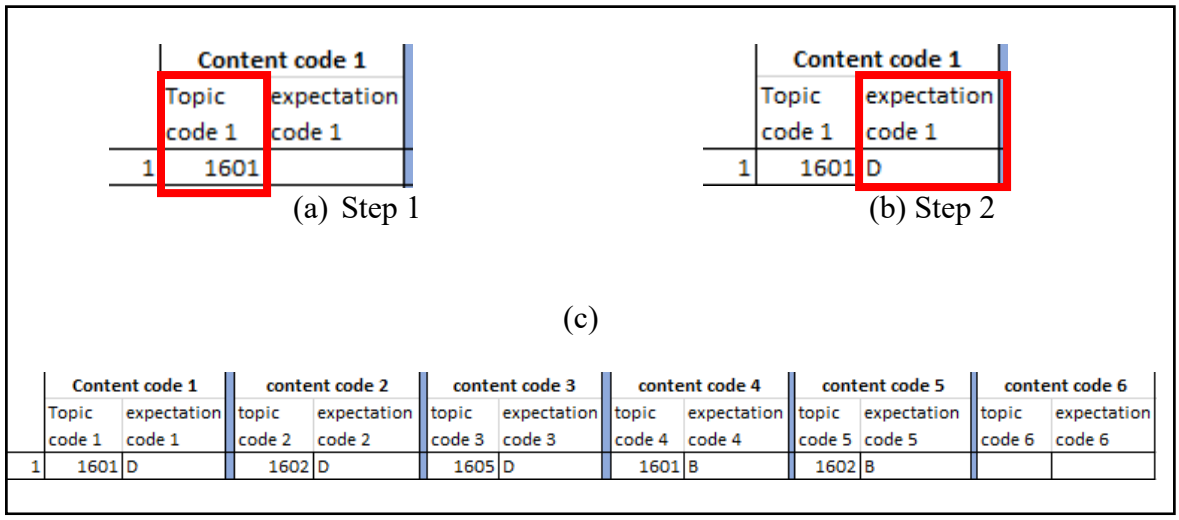


Figure 6.1. (a) First step is to code the Topic code using the knowledge statement; (b) Second step is to code the student expectation/cognitive demand based upon the performance statements; (c) Final coding entry in the coding sheet for the Grade 4 benchmark, National Geography Standard 5, knowledge statement 1.

Table 6.1. Grade K-12 Social Studies Taxonomy for Geography Specific Levels

1500	**Map Skills**
1501	- Diagrams, graphs, models, maps, globes, and atlases
1502	- Photographs, aerial photos, and satellite imagery
1503	- Map properties (e.g., size, shape, distance, and direction)
1504	- Map elements (e.g., title, scale, symbols, and legend)
1505	- Direction (e.g., cardinal points, magnetic, and polar)
1506	- Location (e.g., latitude, longitude, absolute, and relative)
1507	- Location of features on earth (e.g., continents, countries, states, cities, mountains, oceans, rivers)
1508	- Spatial organization (e.g., pattern, hierarchy, distribution, linkage, and accessibility)
1509	- Movement and spatial interaction
1510	- Mental map (creation and use of)
1511	- Geospatial technologies (e.g., geographic information systems and global positioning systems)
1600	**Places and Regions**
1601	- Physical characteristics of places in the U.S. and the world
1602	- Human characteristics of places in the U.S. and the world
1603	- Place creation (e.g., meaning and social relations)
1604	- Place and identity (e.g., personal, community, ethnic, national, regional, and global)
1605	- The concept of regions and regionalization
1606	- Types of regions (formal, functional, and perceptual)
1607	- The influence of culture and experience on people's perceptions of places and regions
1700	**Physical Geography**
1701	- Climate, world climate regions, and major biomes
1702	- Earth/sun relationships and the seasons
1703	- Weather and weather systems
1704	- Formation of and change to landforms
1705	- The hydrologic cycle (i.e., water cycle)
1706	- The oceans
1707	- Ecosystems and ecological processes (e.g., global warming and energy)
1708	- Physical systems
1800	**Human and Cultural Geography**
1801	- Population
1802	- Migration
1803	- Economic processes and systems
1804	- Transportation and communication networks
1805	- Trade and movement of ideas
1806	- Human settlements and urban systems
1807	- Conflict and cooperation over territory
1808	- Geo-political systems and interactions
1809	- Cultural landscape (e.g., religion, ethnicity, and language)
1810	- Locations and characteristics of major culture groups of the world
1900	**Human/Environmental Interactions**
1901	- Human modification of, and adaptation to, the physical environment
1902	- Carrying capacity of environmental systems
1903	- Resources and energy use
1904	- Pollution and environmental problems
1905	- Natural hazards and disasters (e.g., hurricanes, earthquakes, and floods)
2000	**The Uses of Geography**
2001	- The spatial perspective
2002	- The ecological perspective
2003	- Interpreting the past and present
2004	- Forecasting and planning for the future
2005	- Identifying and solving problems
2006	- Connecting self and the world from local to global scales
2007	- Patterns of change

Table 6.2. Expectation for Students in Social Studies

Level	Cognitive Demand	Code
1	Recall/ Memorize	B
2	Process Information/ Investigate	C
3	Demonstrate/ Apply Understanding	D
4	Analyze/Hypothesize	E
5	Synthesize/ Evaluate/ Make Connections	F

During coding, there were times when the knowledge statement included topic codes other than those included in the six geography general topic areas that were used as the guide for the coding (see bolded topics in Table 6.1). Other general content areas included in the SEC social studies taxonomy aligned better. The complete social studies taxonomy is shown in Table 6.3.

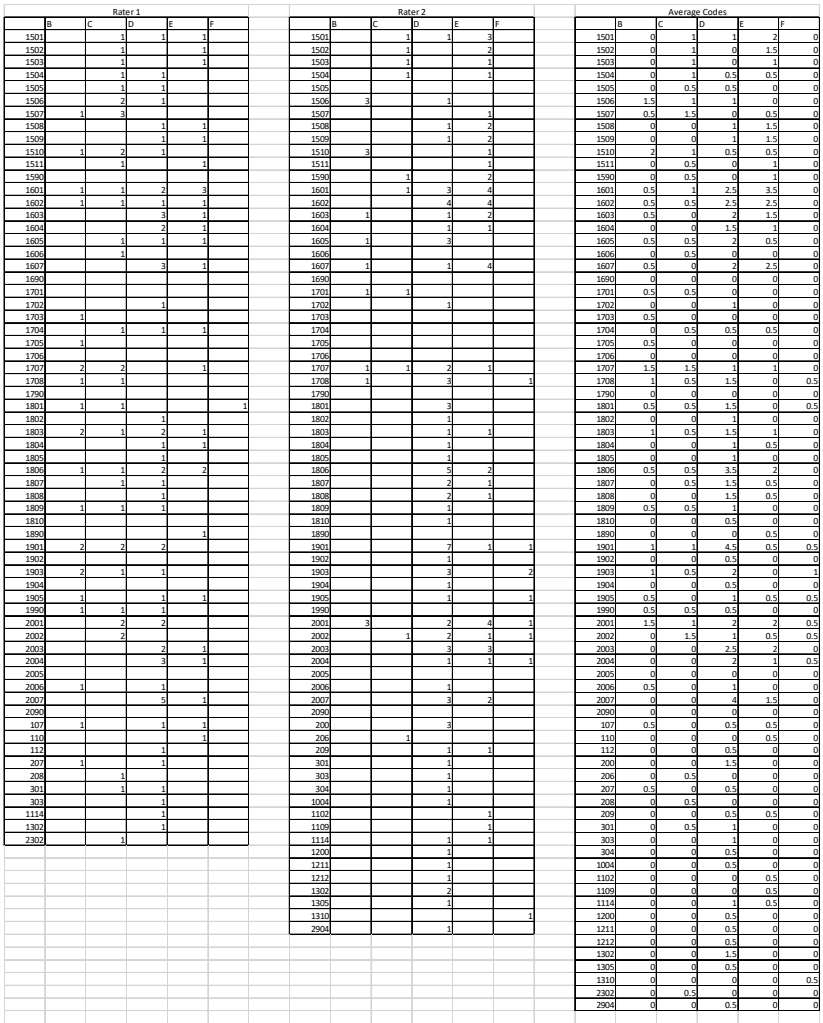
Table 6.3. Grade K-12 Social Studies Taxonomy General Content Areas

100	Social Studies Skills	**1500**	**Map Skills**
200	Human Culture	**1600**	**Places and Regions**
300	Innovation and Cultural Change	**1700**	**Physical Geography**
400	Multicultural Diversity	**1800**	**Human and Cultural Geography**
500	Social Problems	**1900**	**Human/Environment Interactions**
600	Foundations of Government	**2000**	**The Uses of Geography**
700	Principles of American Democracy	2100	State History
800	American Constitutionalism	2200	US History (People, Events, and Documents)
900	Political and Civic Engagement	2300	US History (Growth and Development)
1000	Limited Resources and Choice	2400	US History (Other Themes)
1100	How Markets Work	2500	World History (Pre-History)
1200	Economic Systems	2600	World History (Early Empires and Religions)
1300	Economic Interdependence	2700	World History (Emergence of the Global Age)
1400	Personal Finance	2800	Psychology
		2900	Sociology

The same process was followed for the geography portions of the 19 state social studies frameworks. If applicable, the knowledge statements/objectives that followed each geography standard were coded. This varied across each state depending on how the standards were written and organized. By coding standards in this manner, it allows for

calculating alignment at a deeper range of content coverage, than simply finding the national geography standard quoted verbatim in a state's curriculum framework.

Once the national geography standards and the 19 state social studies frameworks were coded, the codes were placed into a content matrix (Figure 6.2). Figure 6.2 is an example of the resulting coding matrices at the Grade 4 benchmark for rater 1, rater 2, and the average of the two.



Rater 1

	B	C	D	E	F
1501			1	1	1
1502			1		1
1503			1		1
1504			1	1	
1505			1	1	
1506			2	1	
1507	1		3		
1508				1	1
1509				1	1
1510	1		2	1	
1511			1		1
1590					
1601	1		1	2	3
1602	1		1	1	1
1603				3	1
1604				2	1
1605			1	1	1
1606			1		
1607				3	1
1690					
1701					
1702				1	
1703	1				
1704			1	1	1
1705	1				
1706					
1707	2		2		1
1708	1		1		
1790					
1801	1		1		
1802				1	
1803	2		1	2	1
1804				1	1
1805				1	
1806	1		1	2	2
1807			1	1	
1808				1	
1809	1		1	1	
1810					
1890					1
1901	2		2	2	
1902					
1903	2		1	1	
1904					
1905	1			1	1
1990	1		1	1	
2001			2	2	
2002			2		
2003				2	1
2004				3	1
2005					
2006	1			1	
2007				5	1
2090					
107	1			1	1
110					1
112				1	
207	1			1	
208			1		
301			1	1	
303				1	
1114				1	
1302				1	
2302			1		

Rater 2

	B	C	D	E	F
1501			1		1	3	
1502			1			2	
1503			1			1	
1504			1			1	
1505							
1506		3			1		
1507						1	
1508					1	2	
1509					1	2	
1510		3				1	
1511						1	
1590				1		2	
1601			1		3	4	
1602					4	4	
1603		1			1	2	
1604					1	1	
1605		1			3		
1606							
1607		1			1	4	
1690							
1701		1		1			
1702					1		
1703							
1704							
1705							
1706							
1707		1		1	2	1	
1708		1			3		1
1790							
1801					3		
1802					1		
1803					1	1	
1804					1		
1805					1		
1806					5	2	
1807					2	1	
1808					2	1	
1809					1		
1810					1		
1890							
1901					7	1	1
1902					1		
1903					3		2
1904					1		
1905					1		1
1990							
2001		3			2	4	1
2002			1		2	1	1
2003					3	3	
2004					1	1	1
2005							
2006					1		
2007					3	2	
2090							
200					3		
206			1				
209					1	1	
301					1		
303					1		
304					1		
1004					1		
1102						1	
1109						1	
1114					1	1	
1200					1		
1211					1		
1212					1		
1302					2		
1305					1		
1310							1
2904				1			

Average Codes

	B	C	D	E	F
1501	0	1	1	2	0
1502	0	1	0	1.5	0
1503	0	1	0	1	0
1504	0	1	0.5	0.5	0
1505	0	0.5	0.5	0	0
1506	1.5	1	1	0	0
1507	0.5	1.5	0	0.5	0
1508	0	0	1	1.5	0
1509	0	0	1	1.5	0
1510	2	1	0.5	0.5	0
1511	0	0.5	0	1	0
1590	0	0.5	0	1	0
1601	0.5	1	2.5	3.5	0
1602	0.5	0.5	2.5	2.5	0
1603	0.5	0	2	1.5	0
1604	0	0	1.5	1	0
1605	0.5	0.5	2	0.5	0
1606	0	0.5	0	0	0
1607	0.5	0	2	2.5	0
1690	0	0	0	0	0
1701	0.5	0.5	0	0	0
1702	0	0	1	0	0
1703	0.5	0	0	0	0
1704	0	0.5	0.5	0.5	0
1705	0.5	0	0	0	0
1706	0	0	0	0	0
1707	1.5	1.5	1	1	0
1708	1	0.5	1.5	0	0.5
1790	0	0	0	0	0
1801	0.5	0.5	1.5	0	0.5
1802	0	0	1	0	0
1803	1	0.5	1.5	1	0
1804	0	0	1	0.5	0
1805	0	0	1	0	0
1806	0.5	0.5	3.5	2	0
1807	0	0.5	1.5	0.5	0
1808	0	0	1.5	0.5	0
1809	0.5	0.5	1	0	0
1810	0	0	0.5	0	0
1890	0	0	0	0.5	0
1901	1	1	4.5	0.5	0.5
1902	0	0	0.5	0	0
1903	1	0.5	2	0	1
1904	0	0	0.5	0	0
1905	0.5	0	1	0.5	0.5
1990	0.5	0.5	0.5	0	0
2001	1.5	1	2	2	0.5
2002	0	1.5	1	0.5	0.5
2003	0	0	2.5	2	0
2004	0	0	2	1	0.5
2005	0	0	0	0	0
2006	0.5	0	1	0	0
2007	0	0	4	1.5	0
2090	0	0	0	0	0
107	0.5	0	0.5	0.5	0
110	0	0	0	0.5	0
112	0	0	0.5	0	0
200	0	0	1.5	0	0
206	0	0.5	0	0	0
207	0.5	0	0.5	0	0
208	0	0.5	0	0	0
209	0	0	0.5	0.5	0
301	0	0.5	1	0	0
303	0	0	1	0	0
304	0	0	0.5	0	0
1004	0	0	0.5	0	0
1102	0	0	0	0.5	0
1109	0	0	0	0.5	0
1114	0	0	1	0.5	0
1200	0	0	0.5	0	0
1211	0	0	0.5	0	0
1212	0	0	0.5	0	0
1302	0	0	1.5	0	0
1305	0	0	0.5	0	0
1310	0	0	0	0	0.5
2302	0	0.5	0	0	0
2904	0	0	0.5	0	0

Figure 6.2. Content Matrices for *Geography for Life* (2012) Grade 4 benchmark

Reading and Interpreting Content Maps

An alternative way to read the data shown in tabular form in Figure 6.2 is to view the data as a surface area map or content map, similar to a topographical map. The content map shows what content is emphasized or not emphasized in the state standards. The x-axis (vertical grid lines) refers to the five levels of cognitive expectation of students from (1) Recall/Memorize, (2) Process Information/Investigate, (3) Demonstrate/Apply Understanding, (4) Analyze/Hypothesize, and (5) Evaluate/ Synthesize /Make Connections (Table 6.2). The y-axis (horizontal grid lines) displays the content topic area (either coarse grain or fine grain, see Table 6.1). Due to the large data set, the data were analyzed in the six different geography coarse grain topic areas (Map Skills, Places and Regions, Physical Geography, Human and Cultural Geography, Human Environment Interactions, The Uses of Geography).

To read the content maps, the intersection of each topic area and category of cognitive expectations represents a measurement node. Each measurement node indicates the number of times a given topic area by cognitive expectation appears in the state standards framework. Because the variables graphed are nominal, the charts are meaningful only at the intersection of the x- and y-axis.

To understand how to interpret the content maps, Figure 6.3 may be used as a reference. Figure 6.3 shows the map skills included in the Grade 4 benchmark for the national geography standards. It shows that recalling mental mapping (1510) and analyzing diagrams, graphs, models, maps globes, and atlases (1501) were coded twice in the Grade 4 benchmark of the national geography knowledge statements (yellow). Being able to analyze spatial organization (1508) and movement and spatial interaction (1509)

were coded 1.5 times in the national geography standards. The orange represents a range of 0.5-1 of that content being represented in the national standards.

The difference in shading can be understood by looking at the range of 1501-1506 at the investigate level. Investigating diagrams, etc. (1501), photographs, etc. (1502), map properties (1503), map elements (1504), and location (1506) are mentioned once in the national geography grade 4 knowledge statements; whereas, investigating direction (1505) was coded as a 0.5. Examining across the cognitive demand level, 1502 was coded once to investigate (orange), 0 for demonstrating knowledge (blue), and 1.5 to analyze (gray). Again, the content map is just another way to display the tabular data (shown in Figure 6.2) of the content analyses using the coders average.

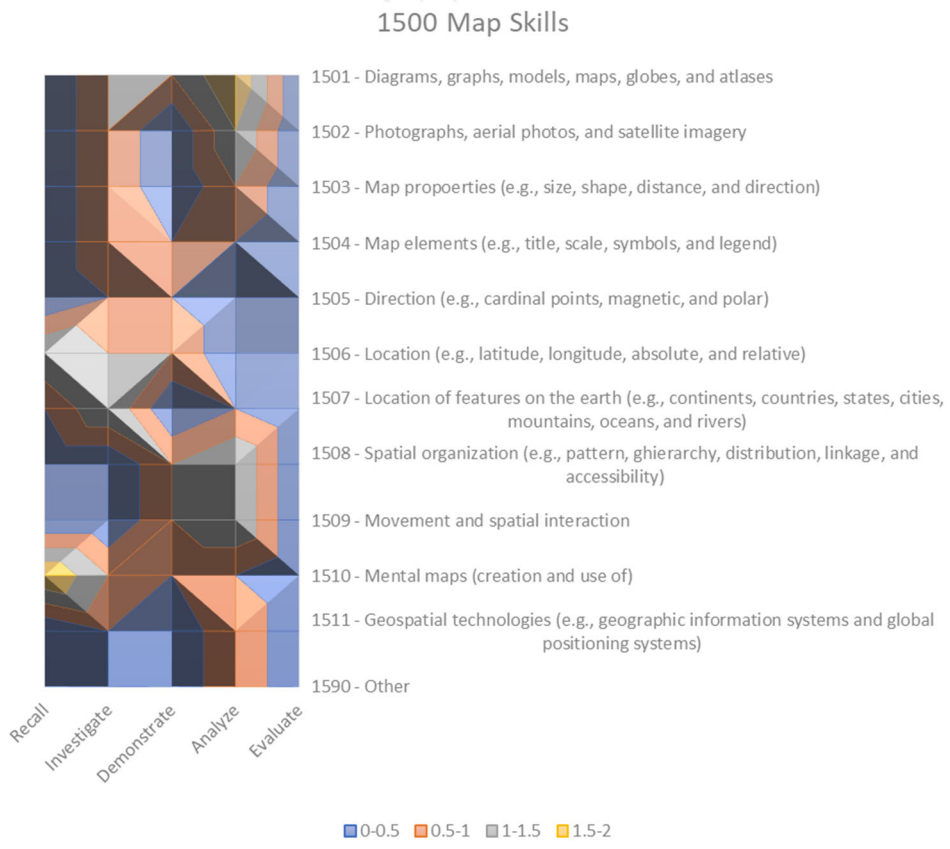


Figure 6.3. Content Map of the National Geography Standards Grade 4 Benchmark of fine grain topics of the general content area Map Skills

Deriving the Alignment Index

To answer the research question, an alignment index was calculated. To determine the alignment index, the proportions for each geography content topic (Map Skills, Places and Regions, Physical Geography, Human and Cultural Geography, Human Environment Interactions, The Uses of Geography) were calculated. Then using the alignment index equation below, alignment was calculated.

$$Alignment\ Index = 1 - \frac{\sum|x - y|}{2}$$

Where, *X* represents the proportions of codes for the national geography standards, and *y* represents the proportions of codes for the state social studies framework. The sum of differences in the absolute values of proportions can be calculated. This value is divided by 2, and then subtracted from 1. The result is a number between 0.0 (no alignment) and 1.0 (perfect alignment). The alignment index for each state is discussed in the next section.

Comparing *Geography for Life: National Geography Standards* (2012) with State Social Studies Standards

The alignment index is designed to tell us the extent to which the national geography standards (2012) were infused into the 19 state social studies standards that revised their standards during the period 2014 to 2017. Only 18 states were coded at the grade 4 benchmark because Utah did not revise their grade 4 standards during the 2014-2017 period. In addition, Florida and West Virginia were coded for grade 3 and grade 4, while Wyoming only at grade 5. At the grade 8 benchmark, 19 state social studies standards were examined. For several states, standards were coded individually at grade

6, 7, and 8, or the 6-8 grade band. This is due to the various nature of the course curriculum established at these middle school grades.

It is common at Grade 8 for history to be the major disciplinary focus. This resulted in very few, if any, geography standards to code. States were more likely to teach world regional geography at grade 6 and grade 7. In an effort to make sure states adoption of national geography standards could be properly measured, grade 6 and 7 geography standards were included in the coding process in addition to grade 8.

In many cases in which the alignment index was used there is an NA, which means that there were no codes in that state related to the general topic area. The absence of any codes means that the pairwise differences in absolute values ($x - y$) are all equal to just the absolute value of y. All values of x are taken to be zero in the formula. When that happens, the sum of differences in the absolute values of proportions will equal one by definition, and the index value will reduce to 0.5 (after the sum is divided by two). Under these circumstances, NA is reported since the alignment index is not computed in a meaningful way.

Even though NA suggests that there is zero alignment between the national geography standards (2012) and state social studies standards due to the lack of codes, an index of 0.0 represents a different kind of zero alignment. When an alignment index of 0.0 is shown, this means that the state did include standards of that general topic area, but none that matched the national geography standards (2012).

Content maps at the fine-grain level for the six geography content topics (Map Skills, Places and Regions, Physical Geography, Human and Cultural Geography, Human/ Environment Interactions, The Uses of Geography) were made for each state to

display the content topic by cognitive demand of student expectations match between *Geography for Life: National Geography Standards* knowledge statements. These statements may be seen on the top portion of each of the graphics and the geography portion of state social studies standards (bottom portion of the graphics).

Grade 4 Inclusion of Map Skills (1500)

States generally displayed a low alignment index for the inclusion of map skills in their state standards as compared to the knowledge statements found in *Geography for Life* (2012). The alignment index ranged from 0.0169 (Virginia 4th grade) to 0.3380 (West Virginia 3rd grade) with an average index of 0.1470 (See Table 6.4). Reviewing the content maps for each state (Figure 6.4 – 6.23), it is possible to see how very few of the states included in their standards the depth and breadth of knowledge recommended in the national geography standards. There is also a wide variation among states on the amount of map skills covered at grade 4. The most common standards were the mention of maps, globes, atlases (1501) and location of features on the Earth (1507). Few states included mental mapping (1510) and the use of geospatial technology (1511).

Table 6.4. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 4 Benchmark for Map Skills

State	1500 Map Skills	State	1500 Map Skills
Arkansas	0.3238	Maryland	0.1017
Connecticut	0.2881	Missouri	0.0508
Delaware	0.1356	Nevada	0.1525
Florida (3rd)	0.2034	New Jersey	0.2283
Florida (4th)	0.1695	South Dakota	0.0678
Georgia	0.1186	Virginia	0.0169
Idaho	0.1186	West Virginia (3rd)	0.3380
Illinois	0.0678	West Virginia (4th)	0.0339
Indiana	0.1695	Wyoming (5th)	0.1356
Iowa	0.0678	*Average*	*0.1470*
Kentucky	0.1525		

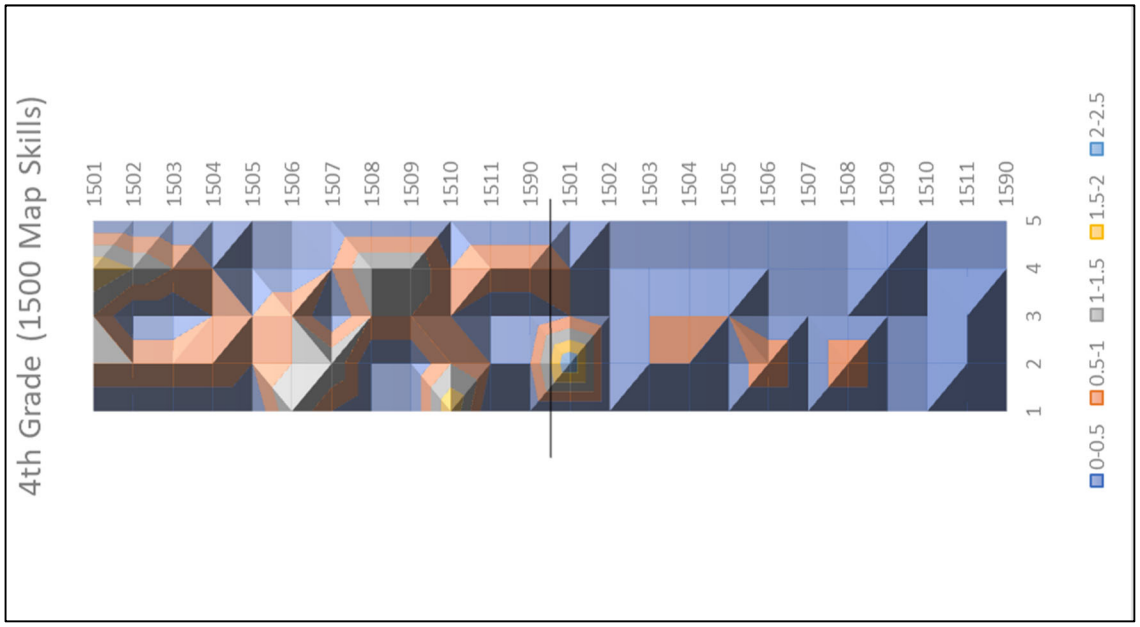


Figure 6.4. Geography Curriculum Correspondence between National Geography Standards (top) and Arkansas Social Studies Standards (bottom)

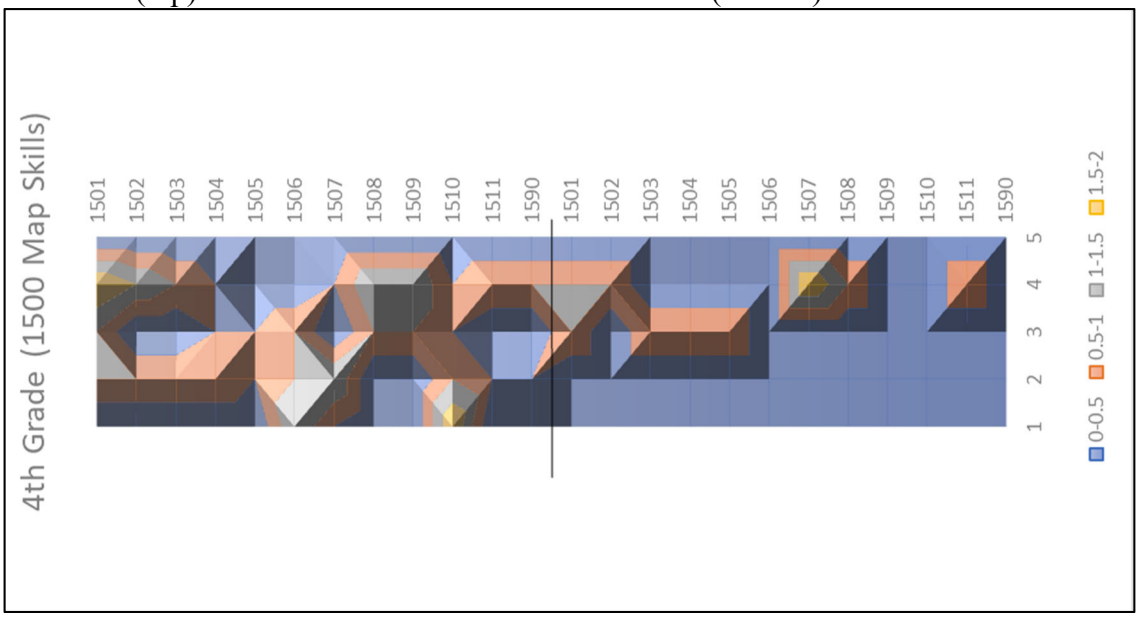


Figure 6.5. Geography Curriculum Correspondence between National Geography Standards (top) and Connecticut Social Studies Standards (bottom)

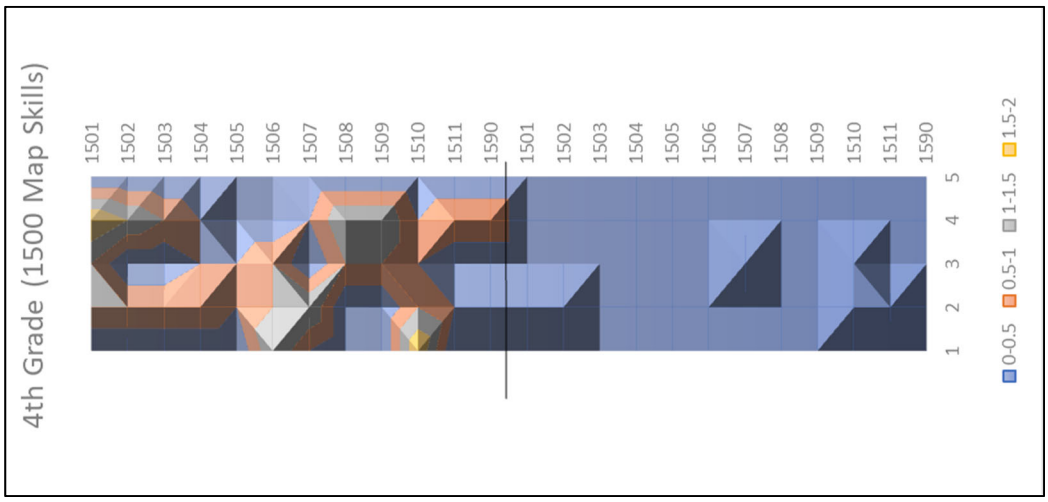


Figure 6.6. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

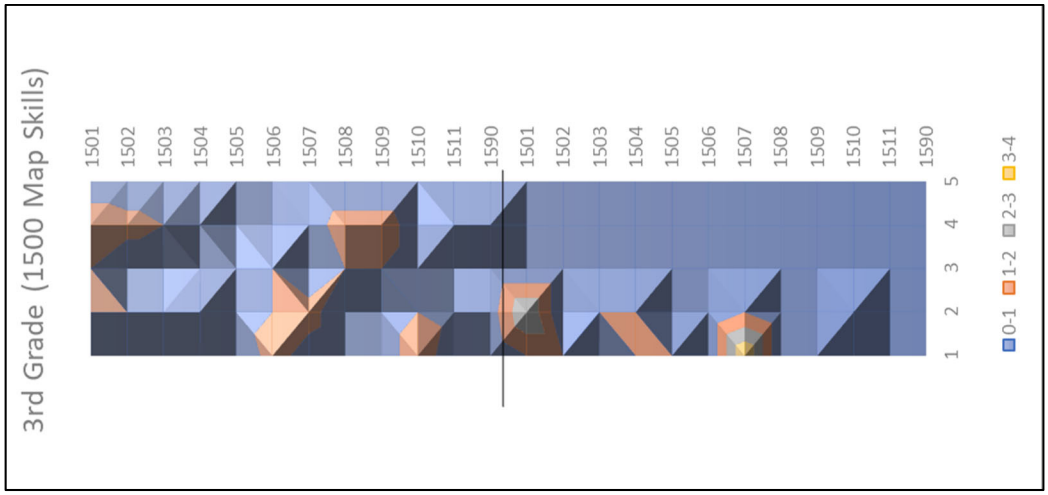


Figure 6.7. Geography Curriculum Correspondence between National Geography Standards and Florida (3rd grade) Social Studies Standards

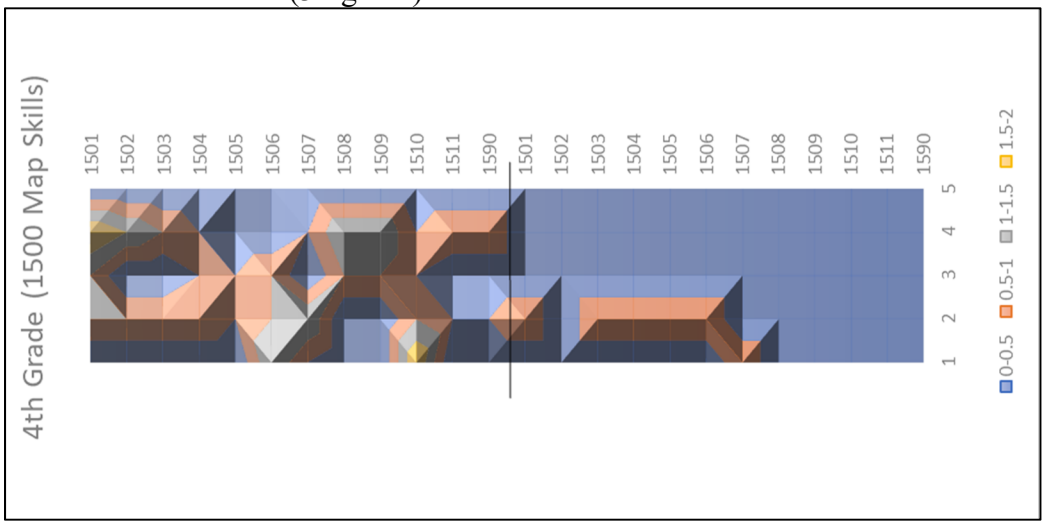


Figure 6.8. Geography Curriculum Correspondence between National Geography Standards and Florida (4th grade) Social Studies Standards

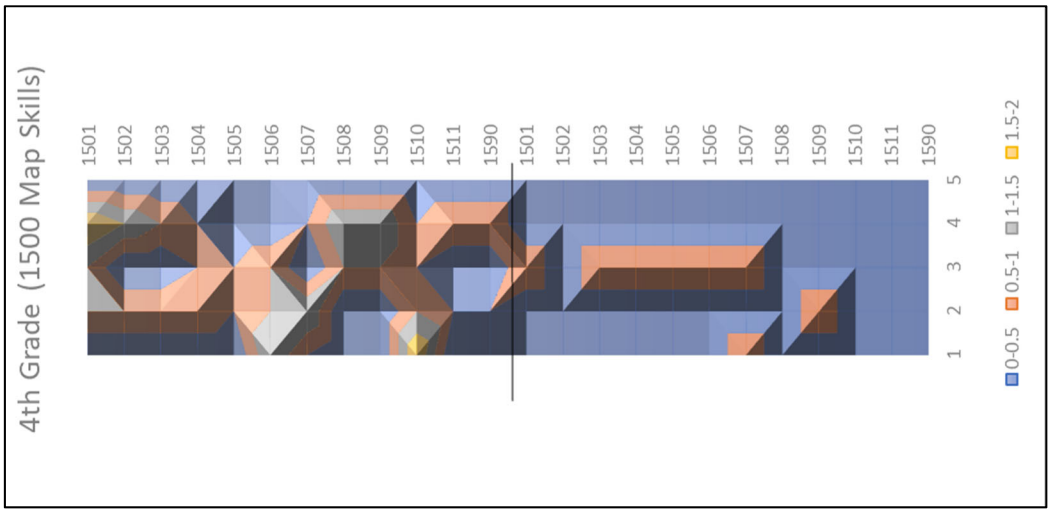


Figure 6.9. Geography Curriculum Correspondence between National Geography Standards and Georgia Social Studies Standards

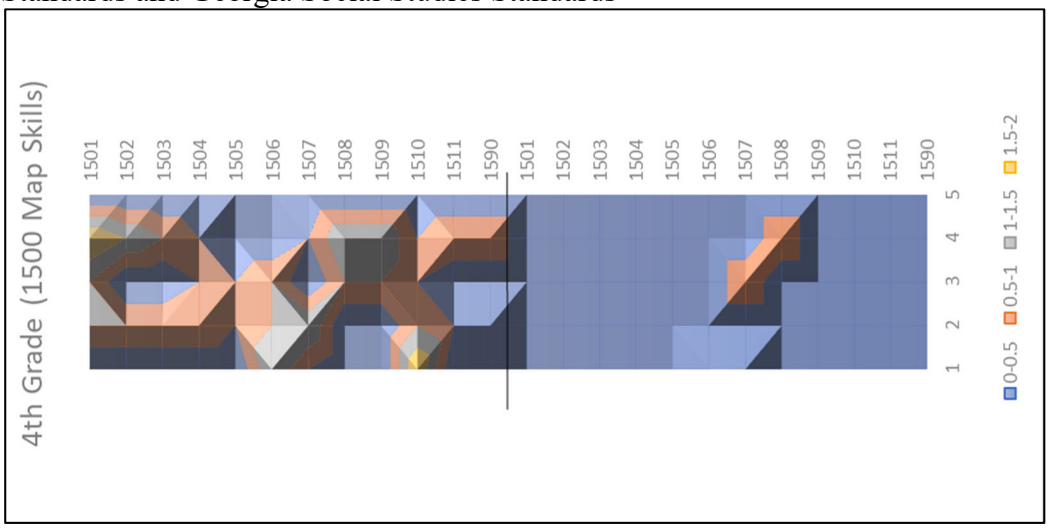


Figure 6.10. Geography Curriculum Correspondence between National Geography Standards and Idaho Social Studies Standards

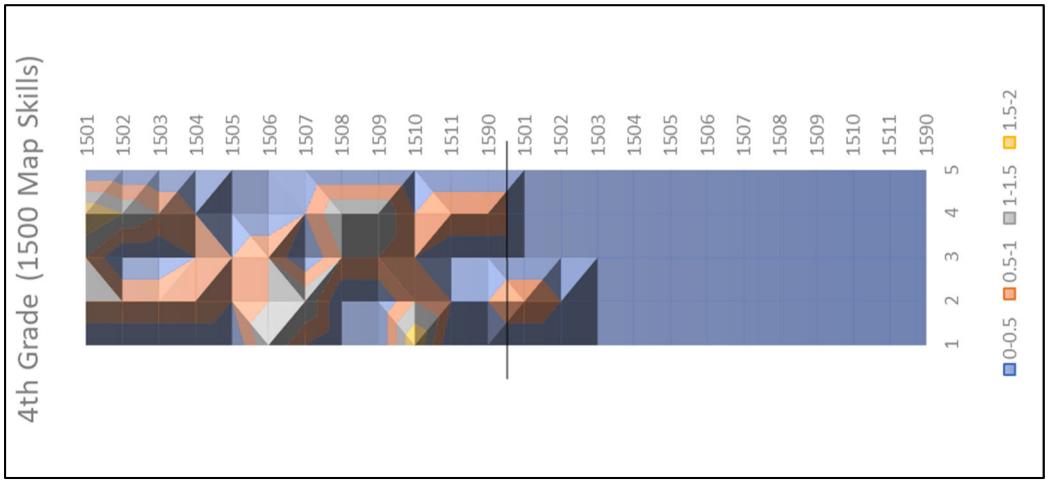


Figure 6.11. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

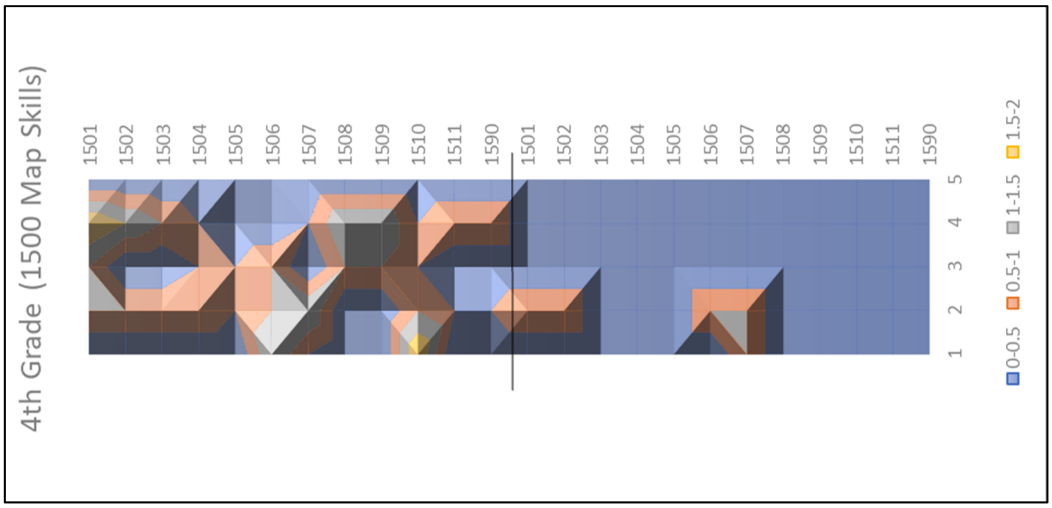


Figure 6.12. Geography Curriculum Correspondence between National Geography Standards and Indiana Social Studies Standards

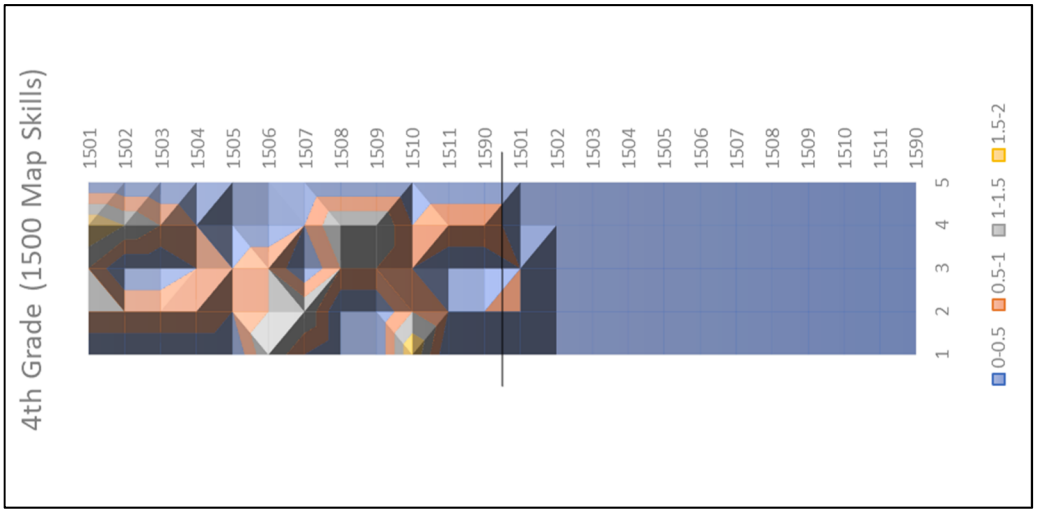


Figure 6.13. Geography Curriculum Correspondence between National Geography Standards and Iowa Social Studies Standards

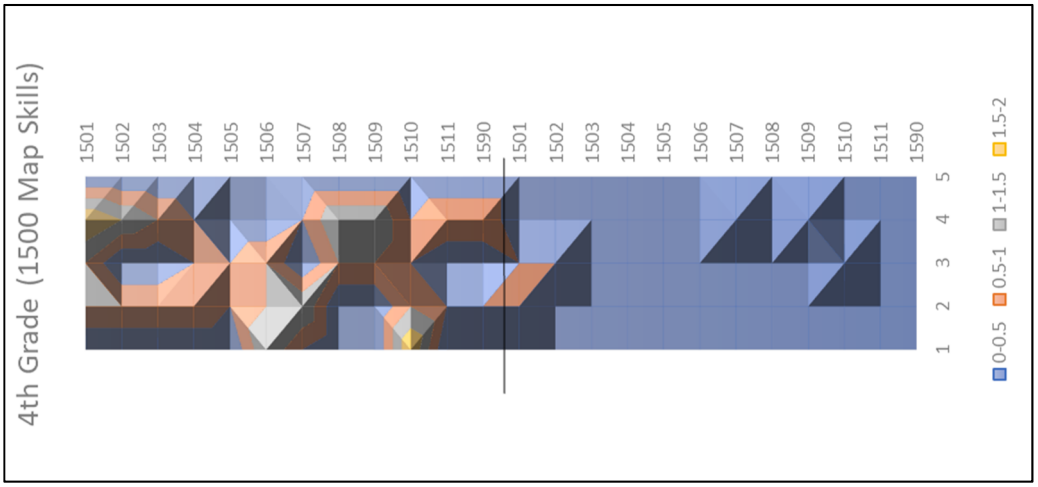


Figure 6.14. Geography Curriculum Correspondence between National Geography Standards and Kentucky Social Studies Standards

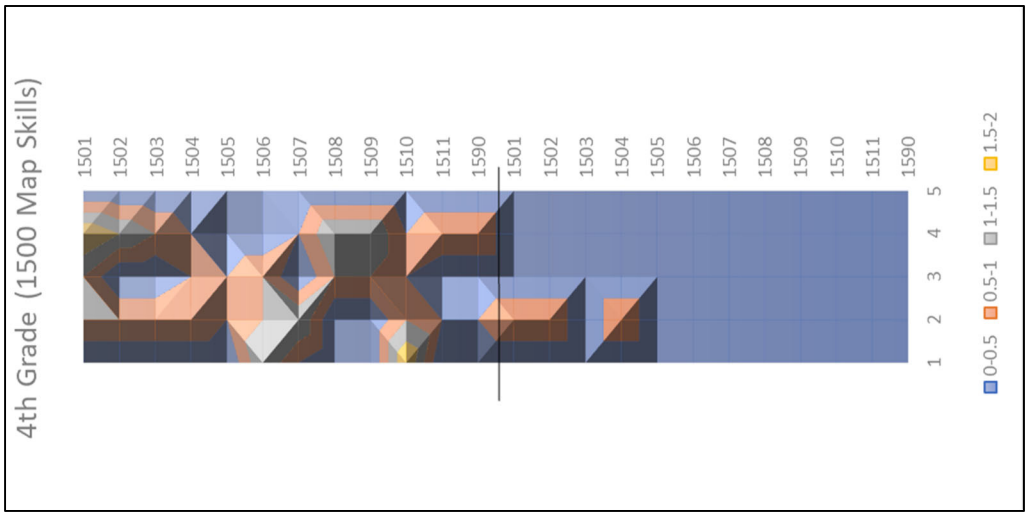


Figure 6.15. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

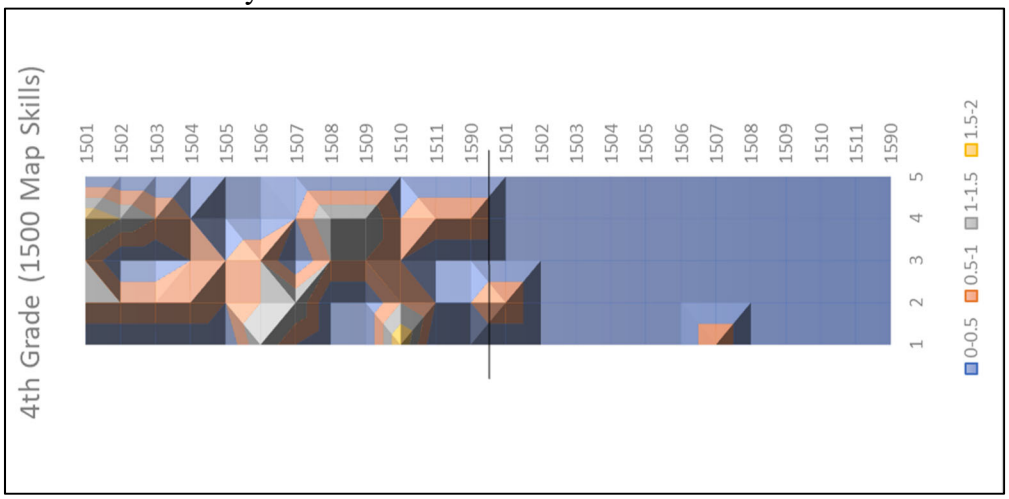


Figure 6.16. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

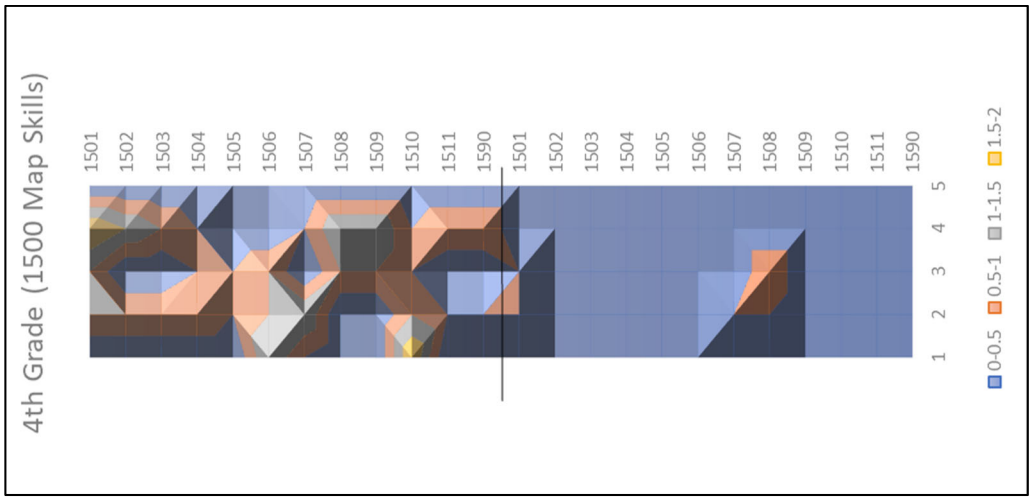


Figure 6.17. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

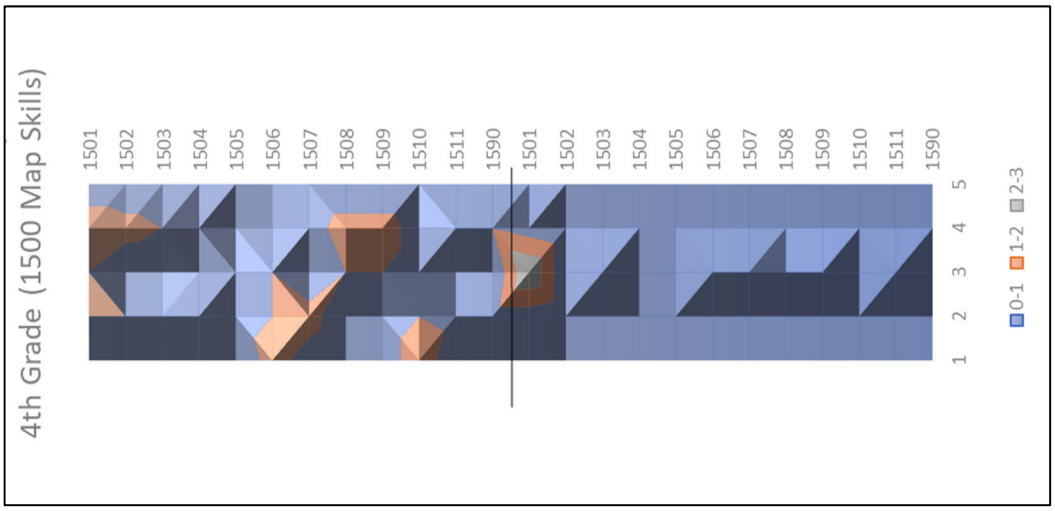


Figure 6.18. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

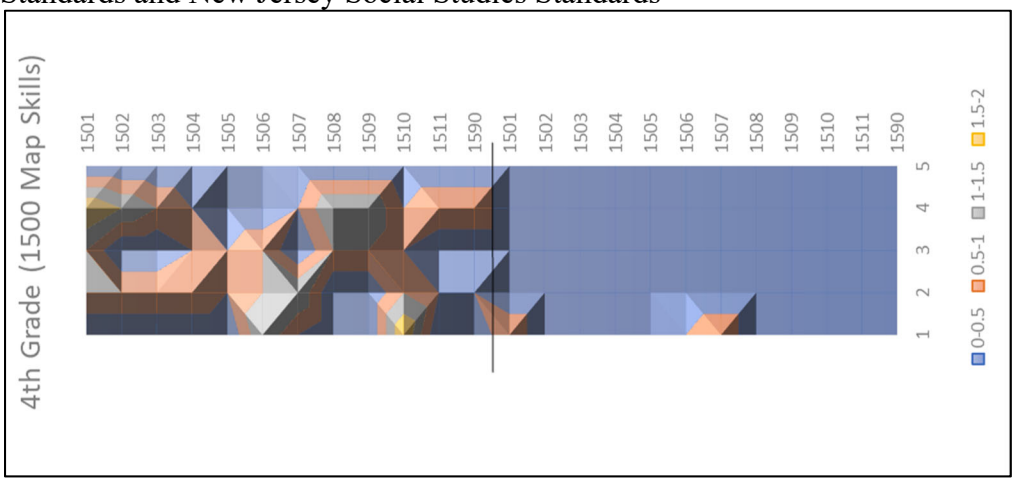


Figure 6.19. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

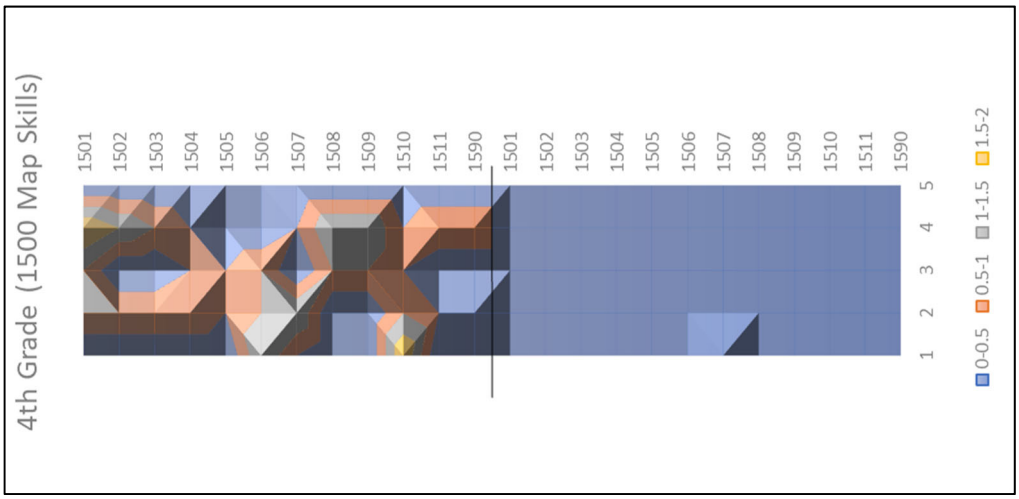


Figure 6.20. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

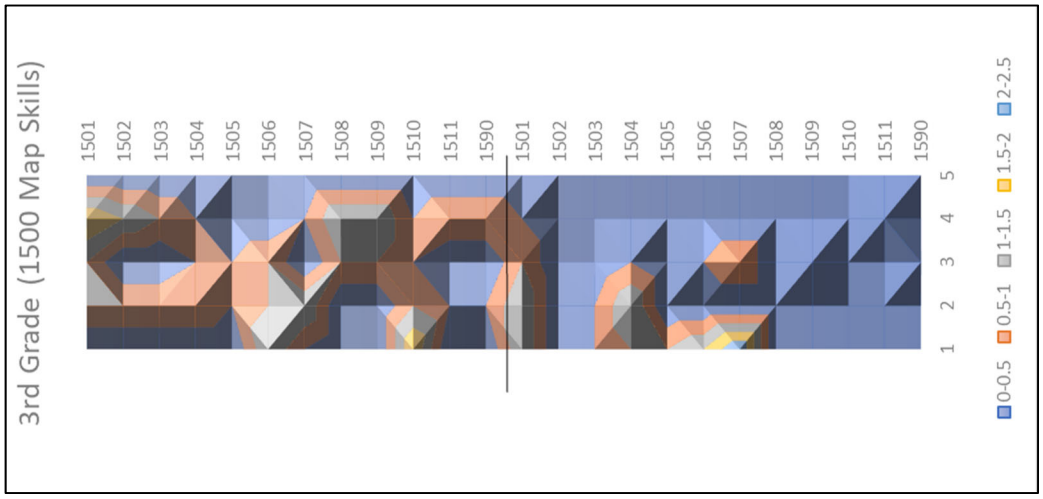


Figure 6.21. Geography Curriculum Correspondence between National Geography Standards and West Virginia (3rd grade) Social Studies Standards

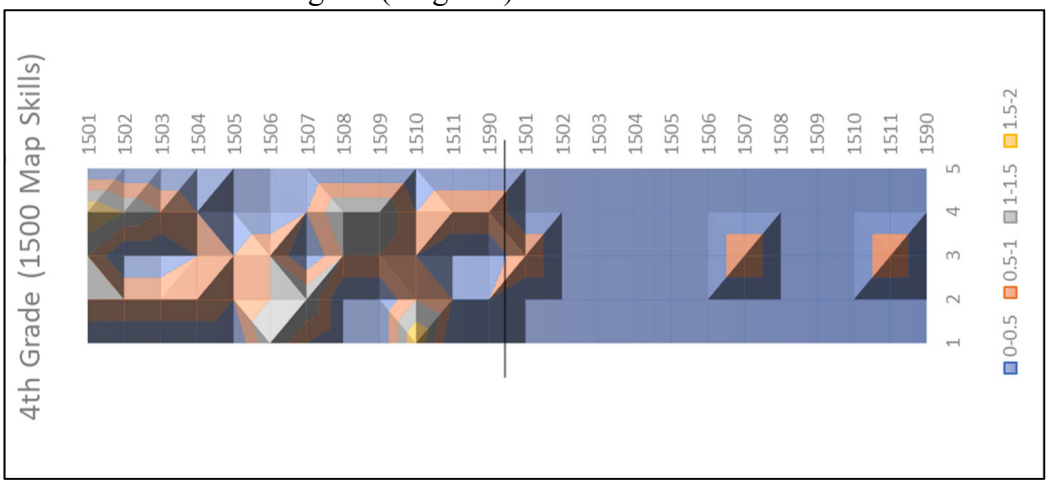


Figure 6.22. Geography Curriculum Correspondence between National Geography Standards and West Virginia (4th grade) Social Studies Standards

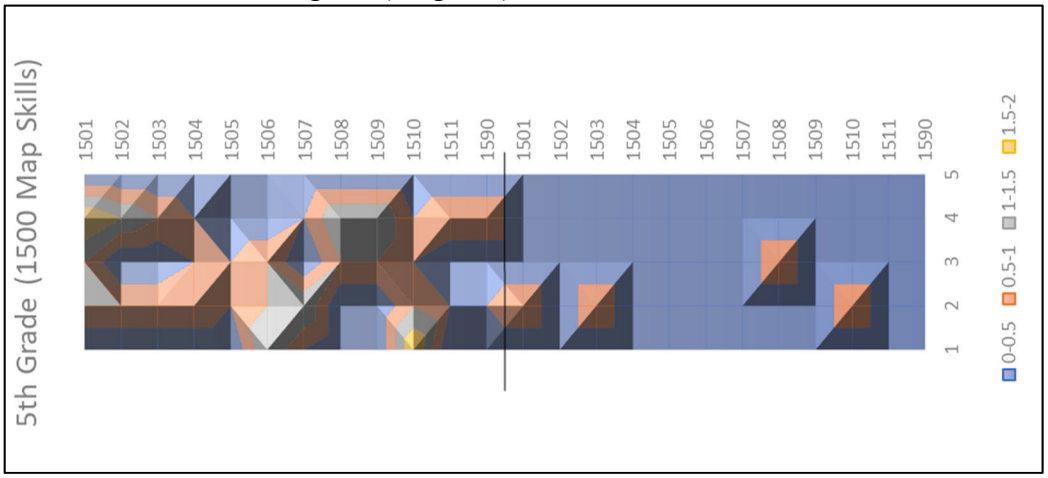


Figure 6.23. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 4 Inclusion of Places and Regions (1600)

Places and Regions was the most common topic found across the 18 state social studies standards with the highest alignment to the national geography standards. The alignment index ranged from 0.0172 (Florida 4th grade) to 0.6256 (South Dakota) (Table 6.5). There was one state, West Virginia, at the 4th grade, that had no standards in Places and Regions, which is represented as an NA for the alignment index. The absence of any codes means that the pairwise differences in absolute values ($x - y$) are all equal to just the absolute value of y. All values of x are taken to be zero in the formula. When that happens, the sum of differences in the absolute values of proportions will equal one by definition, and the index value will reduce to 0.5 (after the sum is divided by two). Under these circumstances, NA is reported since the alignment index is not computed in a meaningful way. The majority of the states were in the 0.1 to 0.4 range of alignment, with an average alignment index of 0.2885.

Looking at the content maps (Figure 6.24 – 6.43) the national geography standards mostly expect students to apply their understanding and analyze across the broad range of topics. Many states align to the same cognitive demand, but mostly on understanding and analyzing the physical characteristics of places (1601) and the human characteristics of places (1602) in the U.S. and the world.

Table 6.5. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 4 Benchmark for Places and Regions

State	1600 Places and Regions
Arkansas	0.4894
Connecticut	0.1724
Delaware	0.1552
Florida (3rd)	0.1379
Florida (4th)	0.0172
Georgia	0.0862
Idaho	0.3103
Illinois	0.3793
Indiana	0.0862
Iowa	0.2414
Kentucky	0.3621
Maryland	0.4138
Missouri	0.5756
Nevada	0.1724
New Jersey	0.4971
South Dakota	0.6256
Virginia	0.1379
West Virginia (3rd)	0.2586
West Virginia (4th)	NA
Wyoming (5th)	0.3621
Average	*0.2885*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

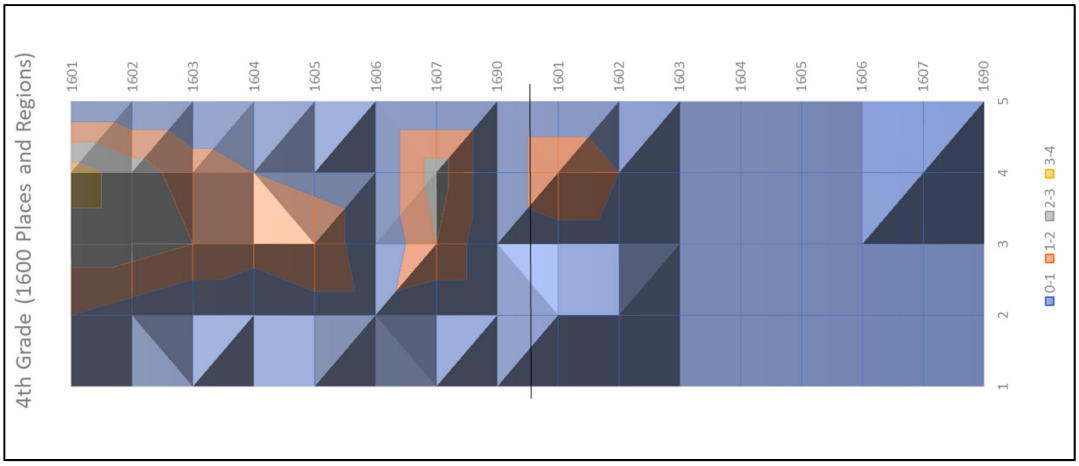


Figure 6.24. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

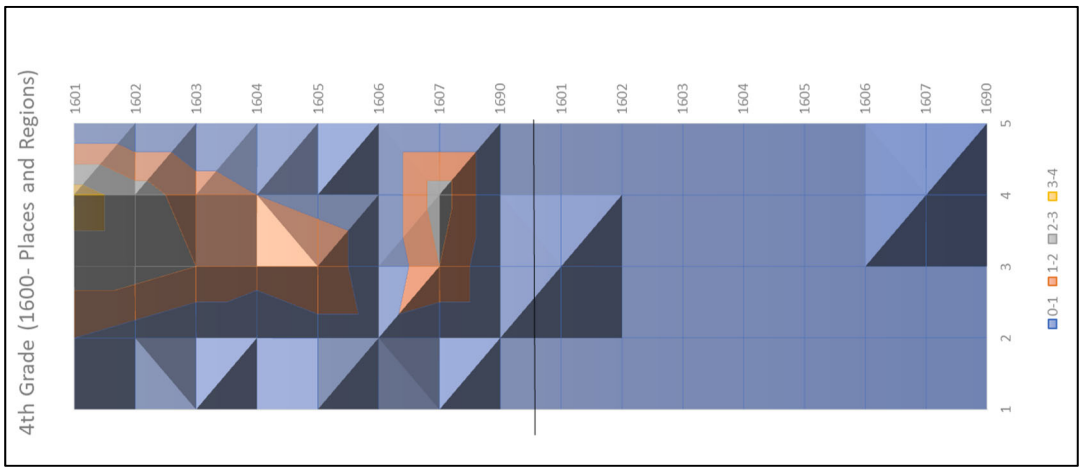


Figure 6.25. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

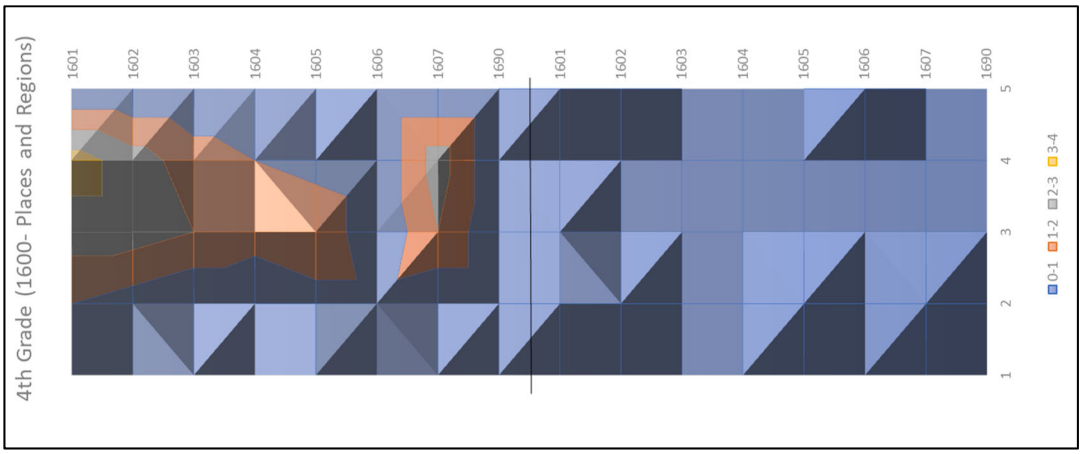


Figure 6.26. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

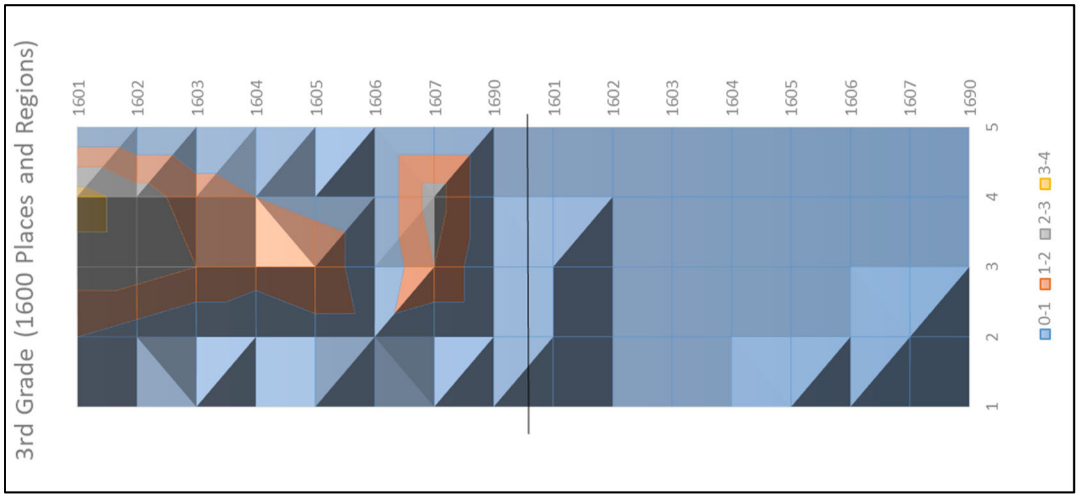


Figure 6.27. Geography Curriculum Correspondence between National Geography Standards and Florida (3rd grade) Social Studies Standards

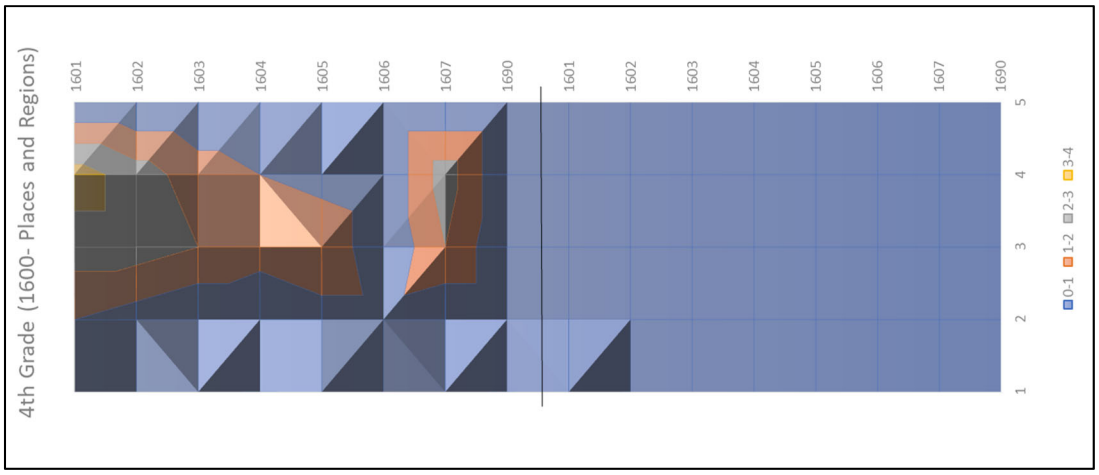


Figure 6.28. Geography Curriculum Correspondence between National Geography Standards and Florida (4th grade) Social Studies Standards

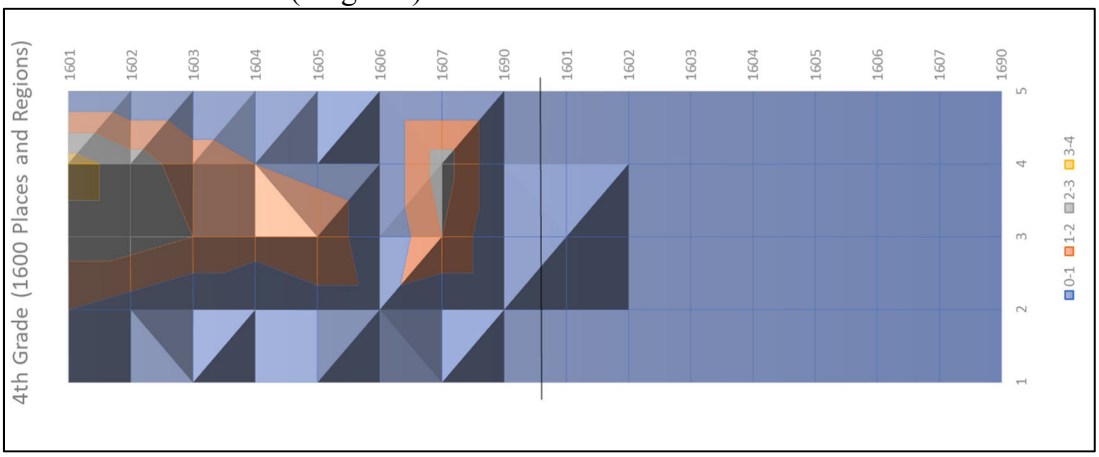


Figure 6.29. Geography Curriculum Correspondence between National Geography Standards and Georgia Social Studies Standards

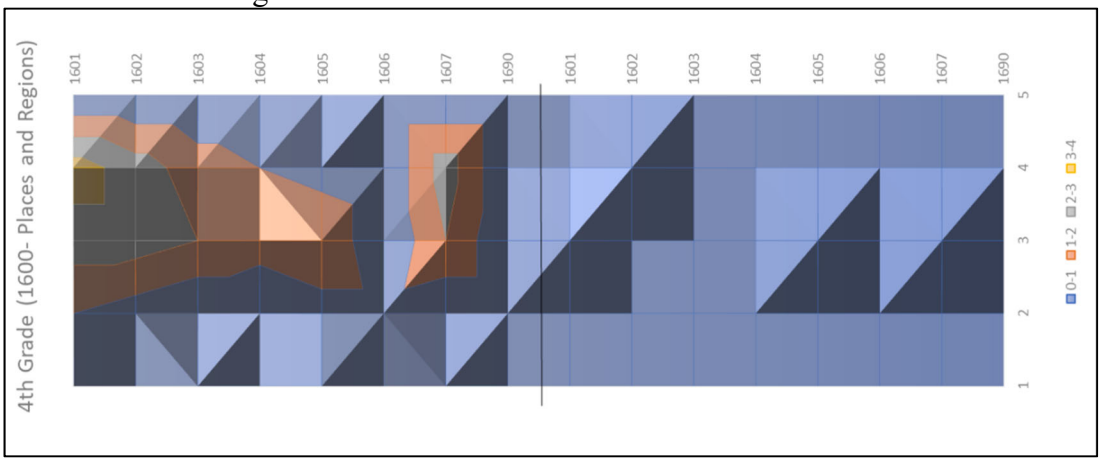


Figure 6.30. Geography Curriculum Correspondence between National Geography Standards and Idaho Social Studies Standards

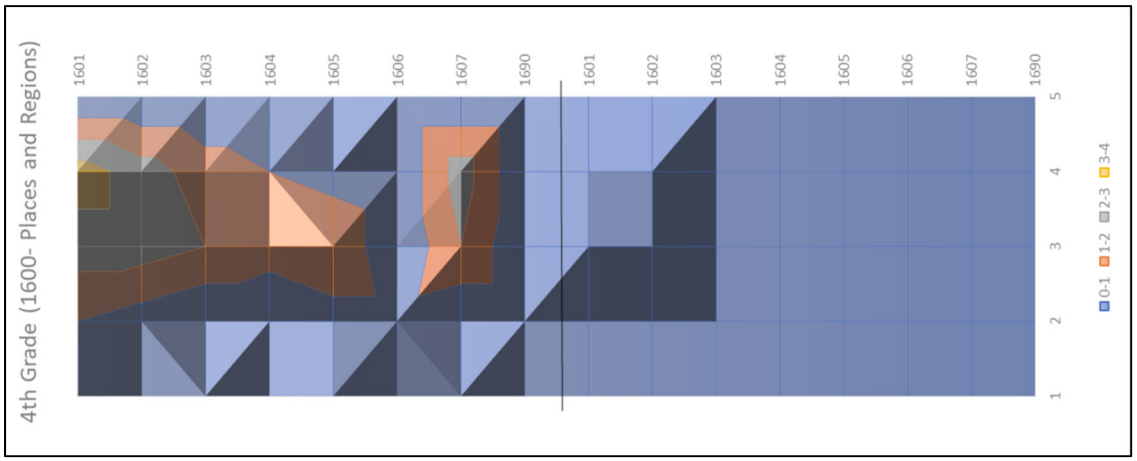


Figure 6.31. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

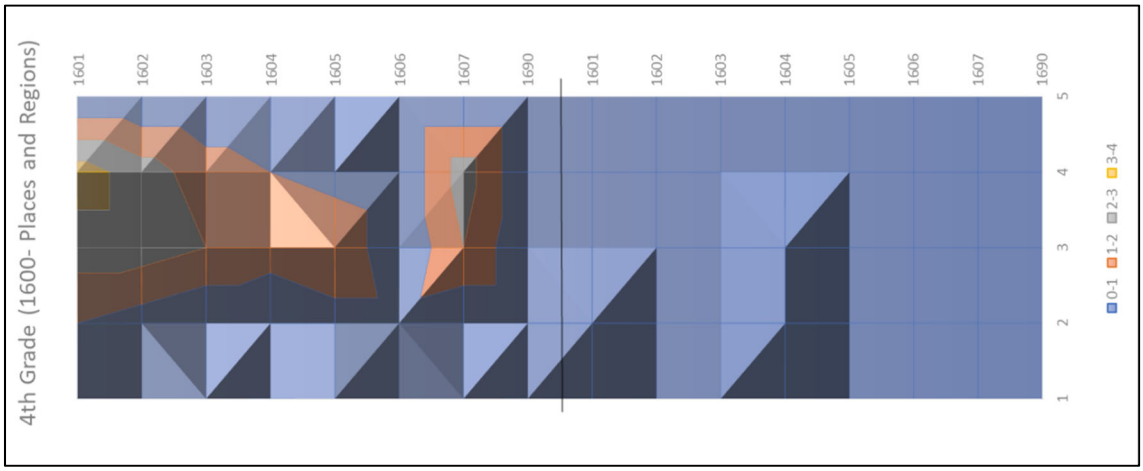


Figure 6.32. Geography Curriculum Correspondence between National Geography Standards and Indiana Social Studies Standards

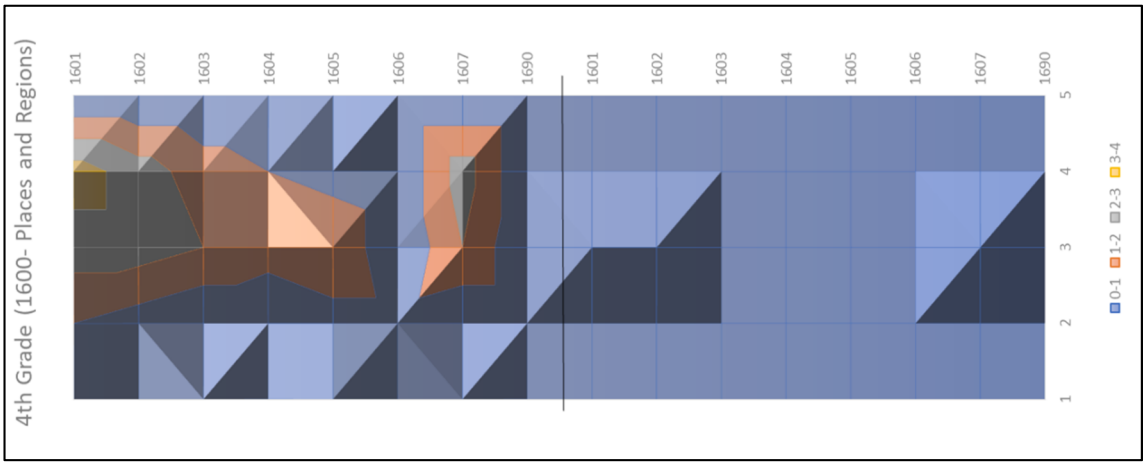


Figure 6.33. Geography Curriculum Correspondence between National Geography Standards and Iowa Social Studies Standards

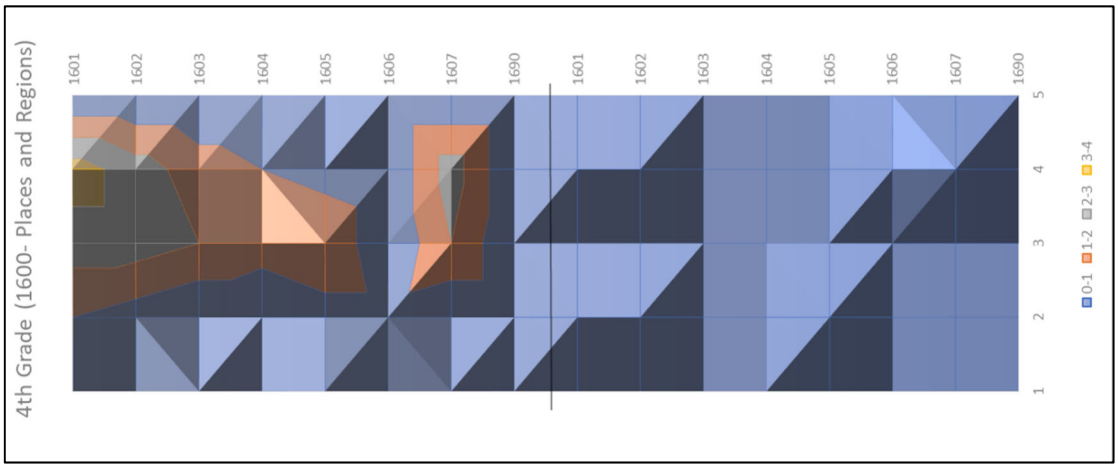


Figure 6.34. Geography Curriculum Correspondence between National Geography Standards and Kentucky Social Studies Standards

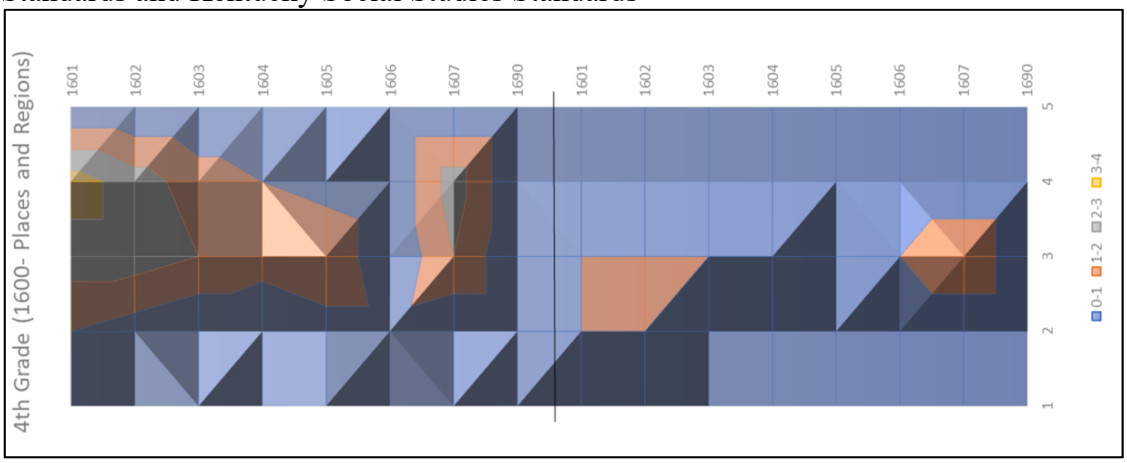


Figure 6.35. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

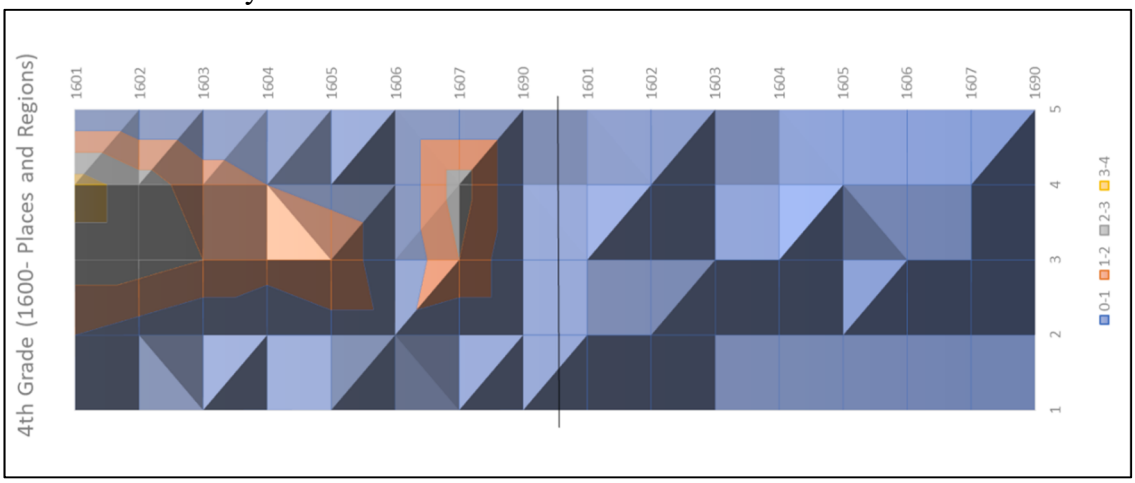


Figure 6.36. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

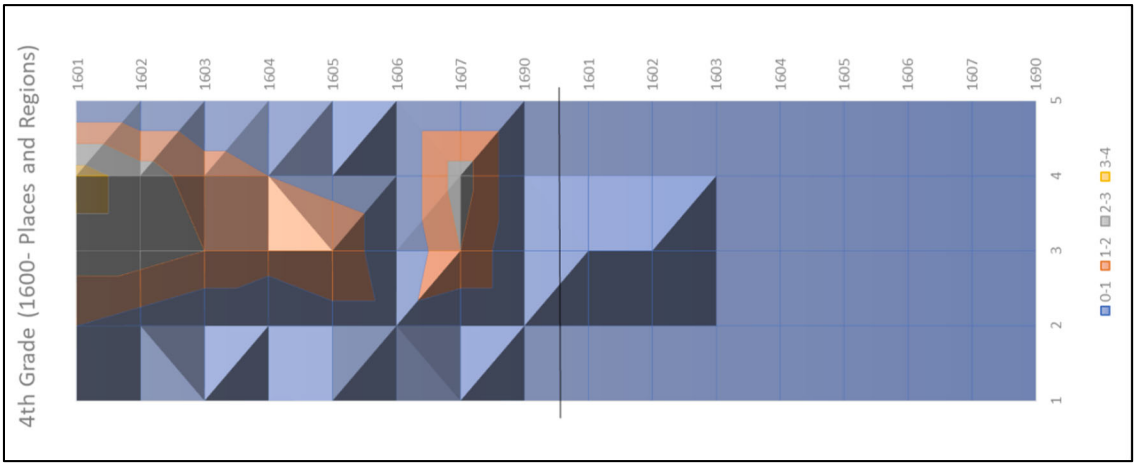


Figure 6.37. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

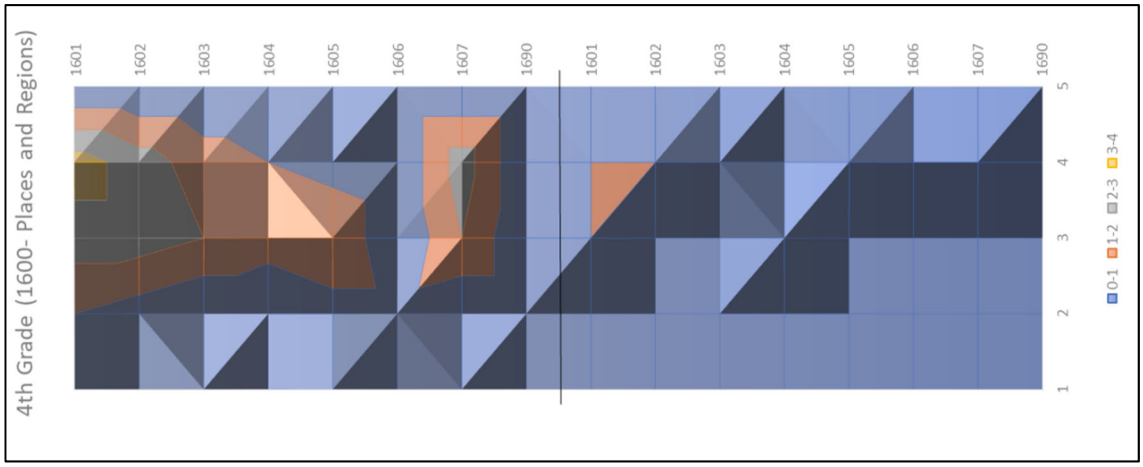


Figure 6.38. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

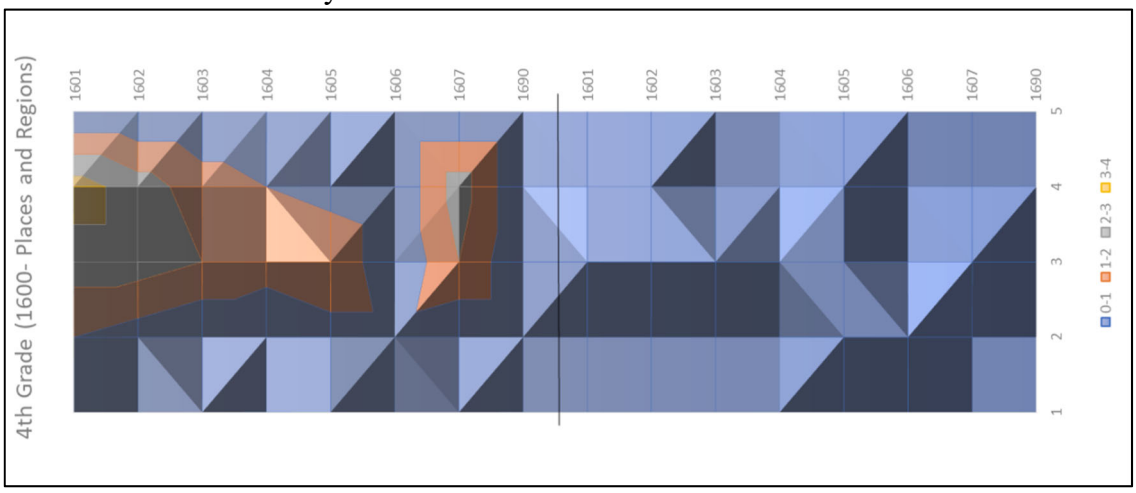


Figure 6.39. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

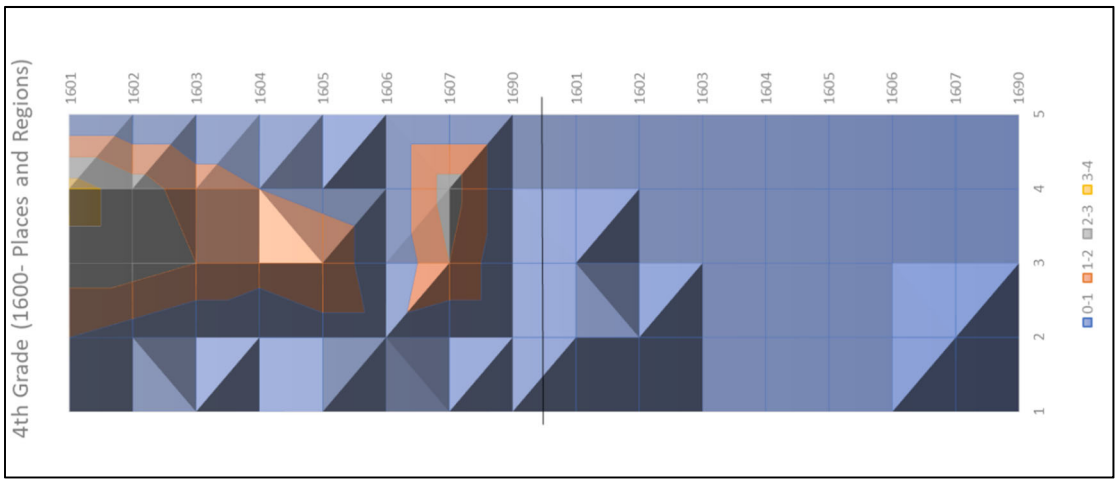


Figure 6.40. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

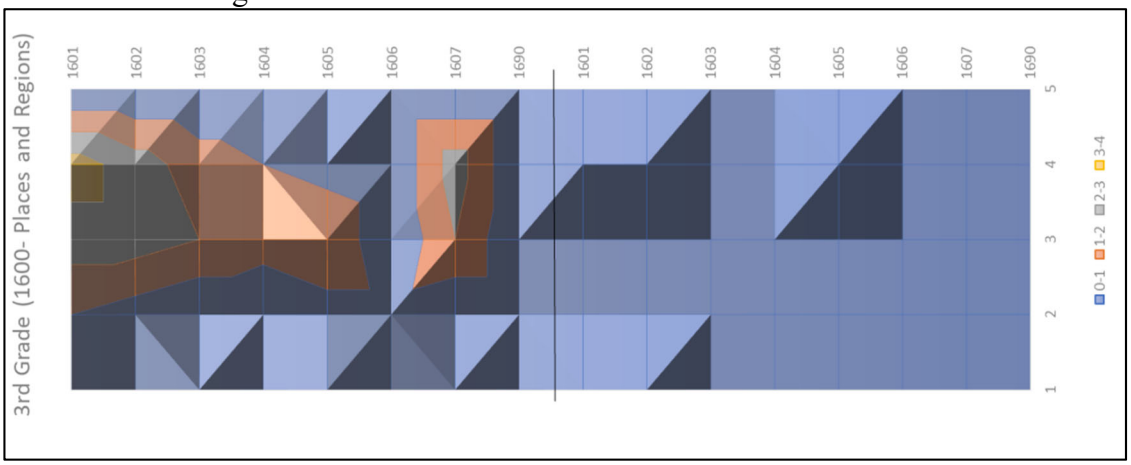


Figure 6.41. Geography Curriculum Correspondence between National Geography Standards and West Virginia (3rd grade) Social Studies Standards

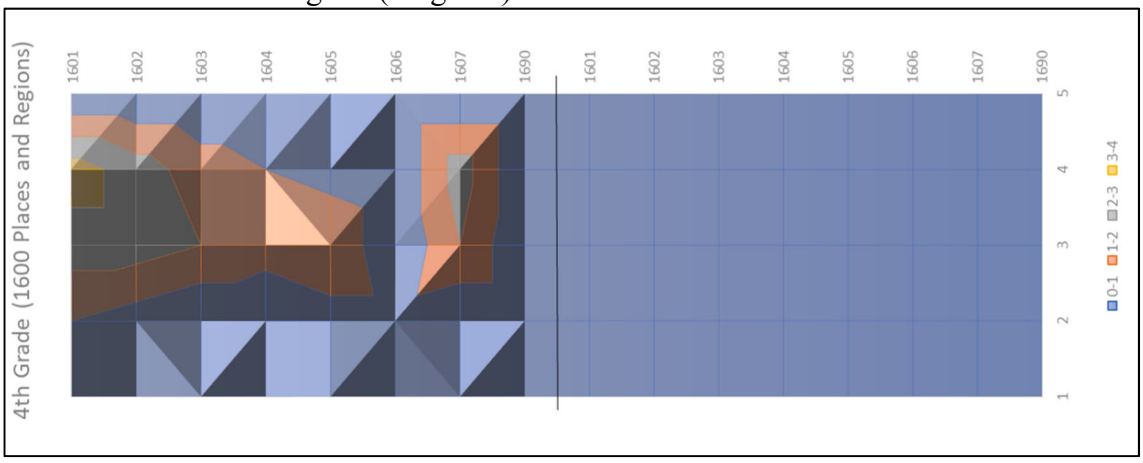


Figure 6.42. Geography Curriculum Correspondence between National Geography Standards and West Virginia (4th grade) Social Studies Standards

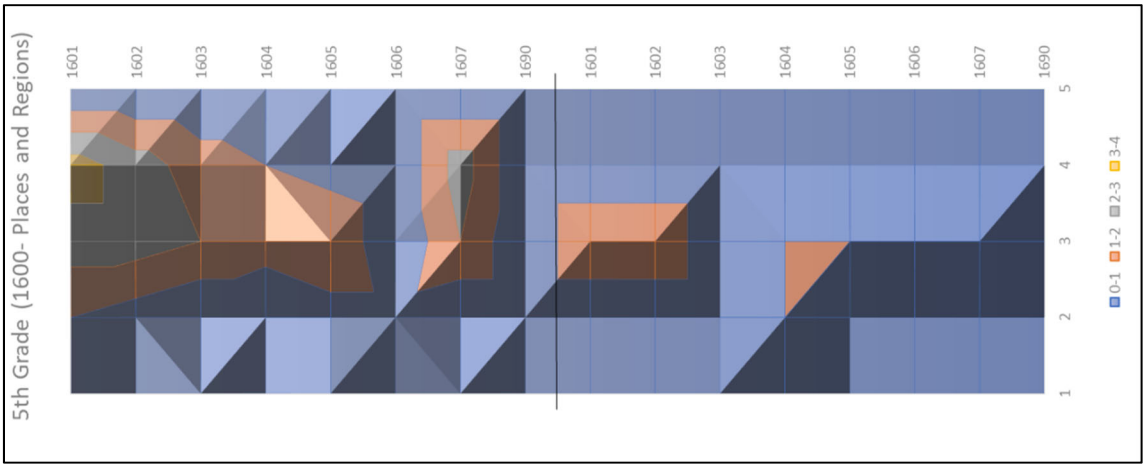


Figure 6.43. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 4 Inclusion of Physical Geography (1700)

Overall, a clear pattern shows that states did not include physical geography standards, or for the few that did, they were not aligned to the national geography standards (Figure 6.44 – 6.63). Two possible reasons for this lack are 1) physical geography standards are normally located in the (earth) science standards, and 2) process-oriented geography does not fit very well into the social studies curriculum. Referring to Table 6.6, 11 states did not include any physical geography standards (NA), four states were not aligned to the national geography standards (0.0), and the remaining five ranged from 0.0769 to 0.2692, with an average of 0.0684.

Table 6.6. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 4 Benchmark for Physical Geography

State	1700 Physical Geography
Arkansas	0.0769
Connecticut	NA
Delaware	0.0000
Florida (3rd)	0.0769
Florida (4th)	0.0000
Georgia	0.1154
Idaho	NA
Illinois	NA
Indiana	0.2692
Iowa	NA
Kentucky	0.0000
Maryland	NA
Missouri	NA
Nevada	NA
New Jersey	0.0000
South Dakota	NA
Virginia	NA
West Virginia (3rd)	0.0769
West Virginia (4th)	NA
Wyoming (5th)	NA
Average	*0.0684*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

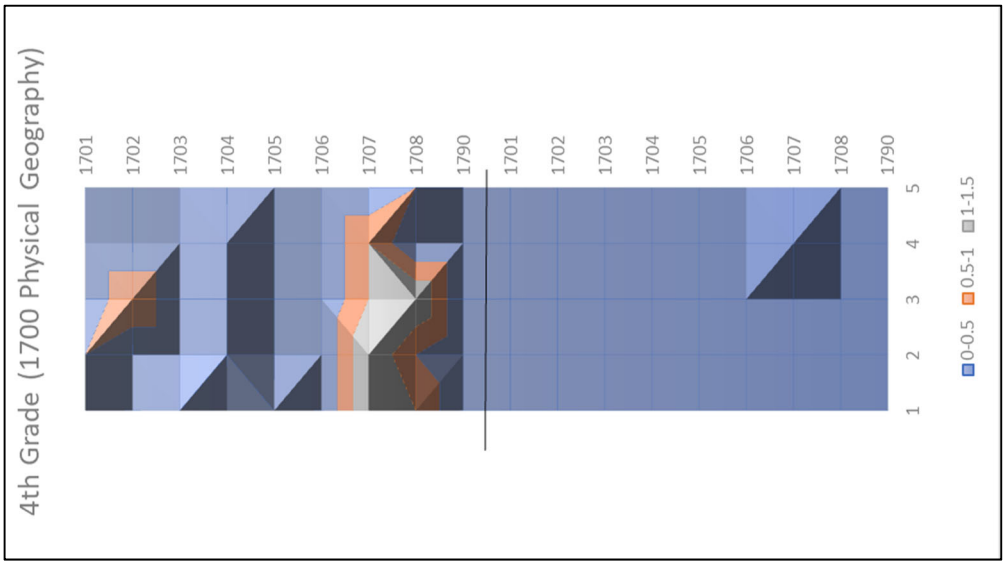


Figure 6.44. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

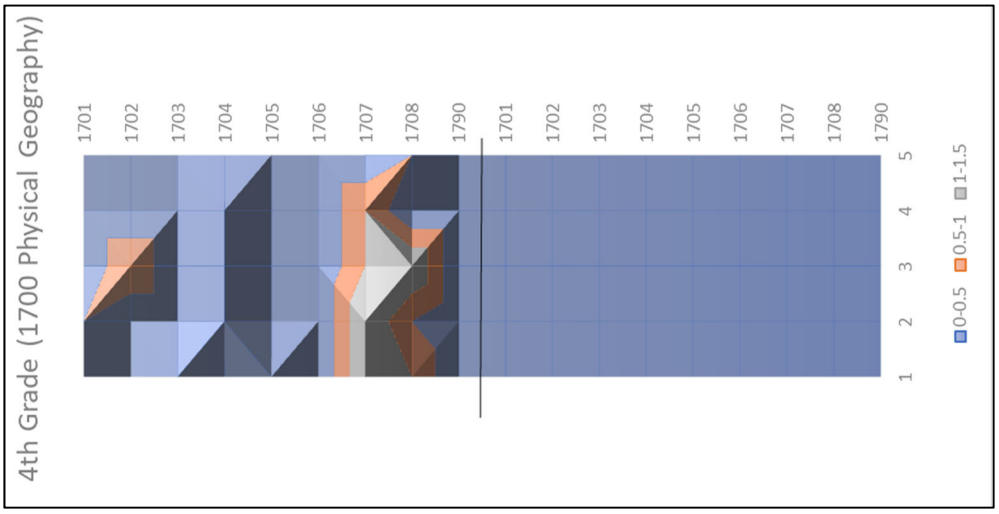


Figure 6.45. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

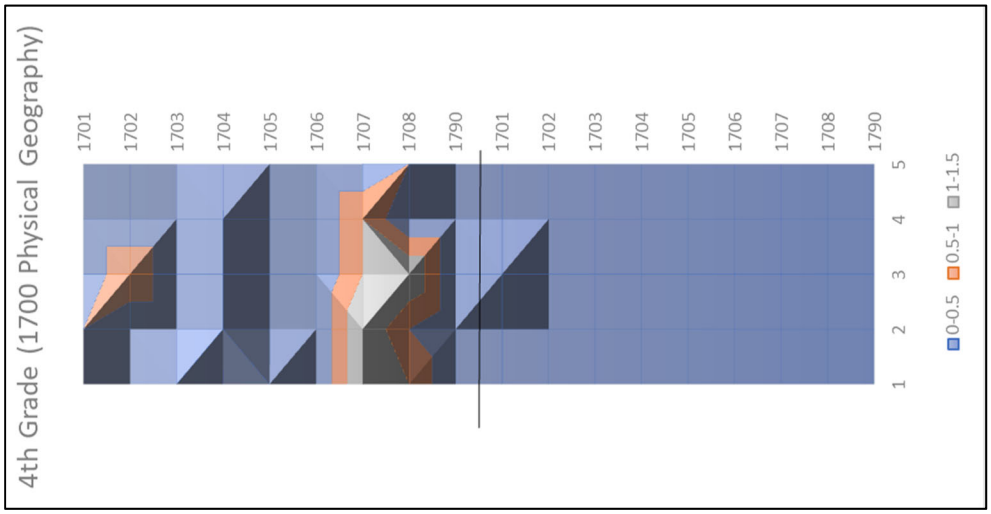


Figure 6.46. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

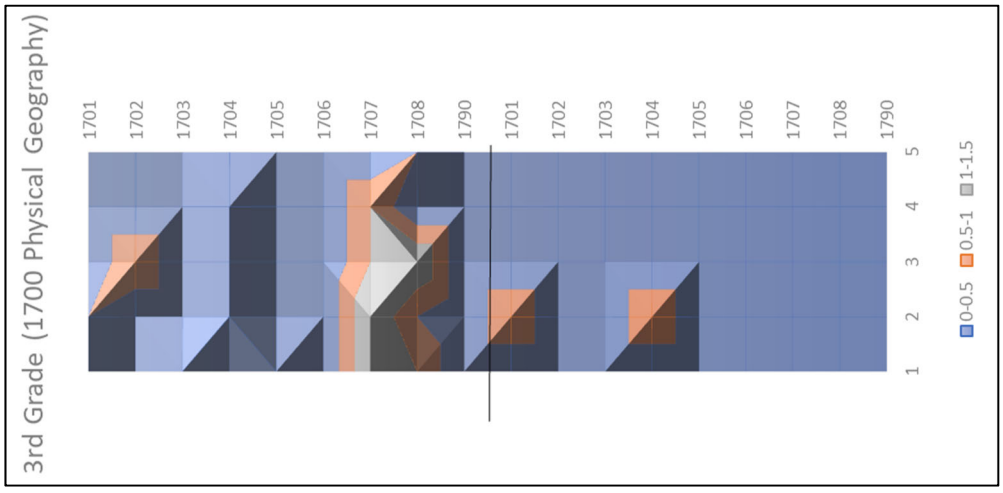


Figure 6.47. Geography Curriculum Correspondence between National Geography Standards and Florida (3rd grade) Social Studies Standards

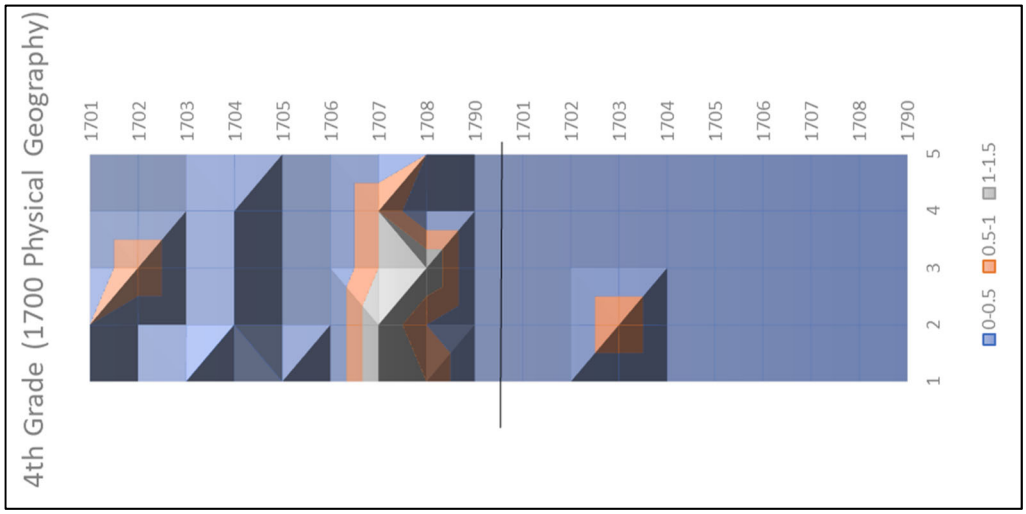


Figure 6.48. Geography Curriculum Correspondence between National Geography Standards and Florida (4th grade) Social Studies Standards

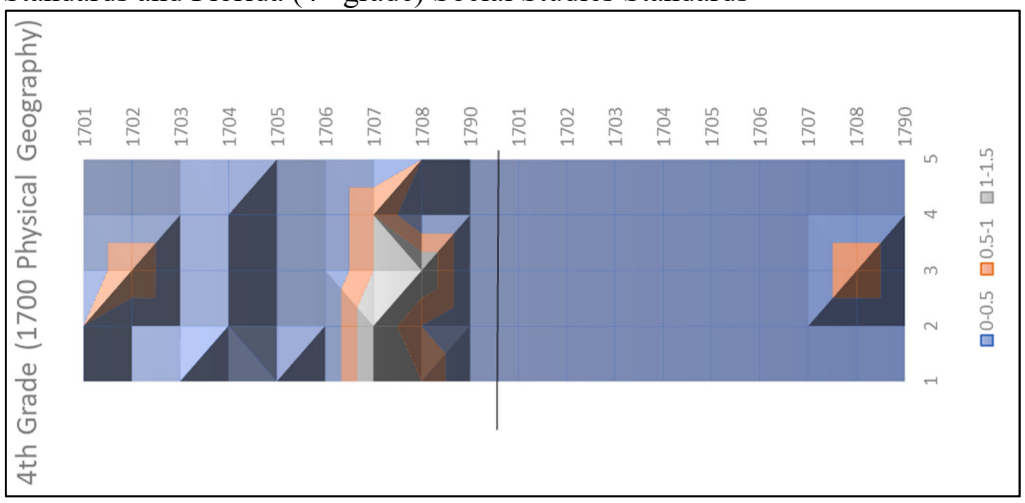


Figure 6.49. Geography Curriculum Correspondence between National Geography Standards and Georgia Social Studies Standards

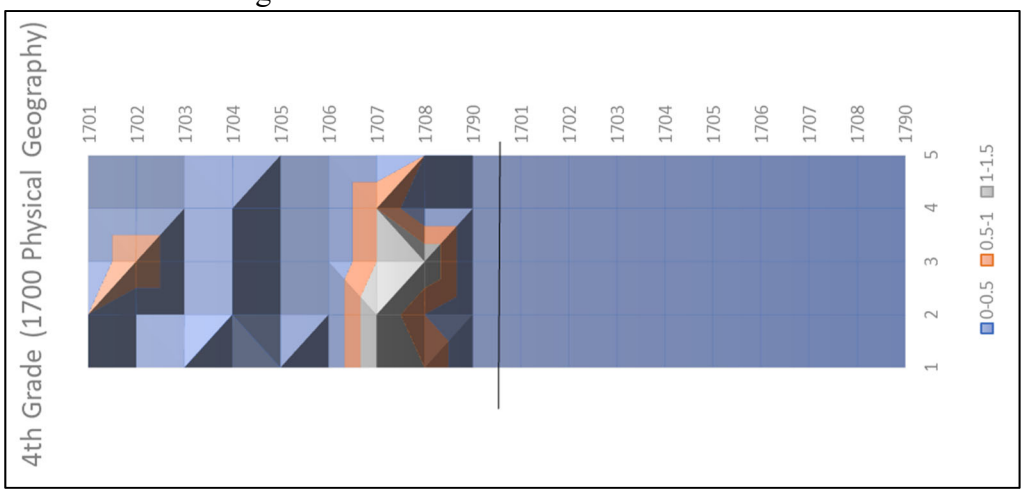


Figure 6.50. Geography Curriculum Correspondence between National Geography Standards and Idaho Social Studies Standards

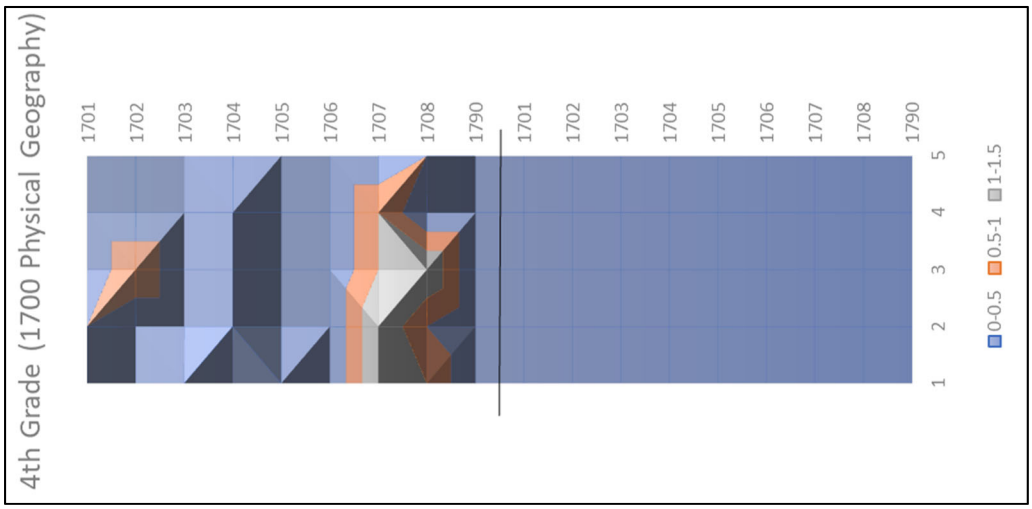


Figure 6.51. Geography Curriculum Correspondence between National Geography Standards and Illinoi Social Studies Standards

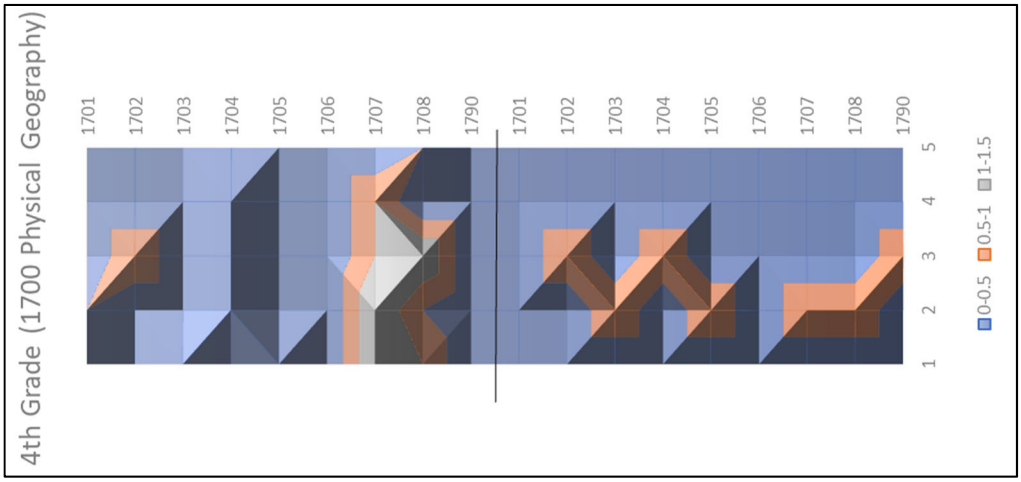


Figure 6.52. Geography Curriculum Correspondence between National Geography Standards and Indiana Social Studies Standards

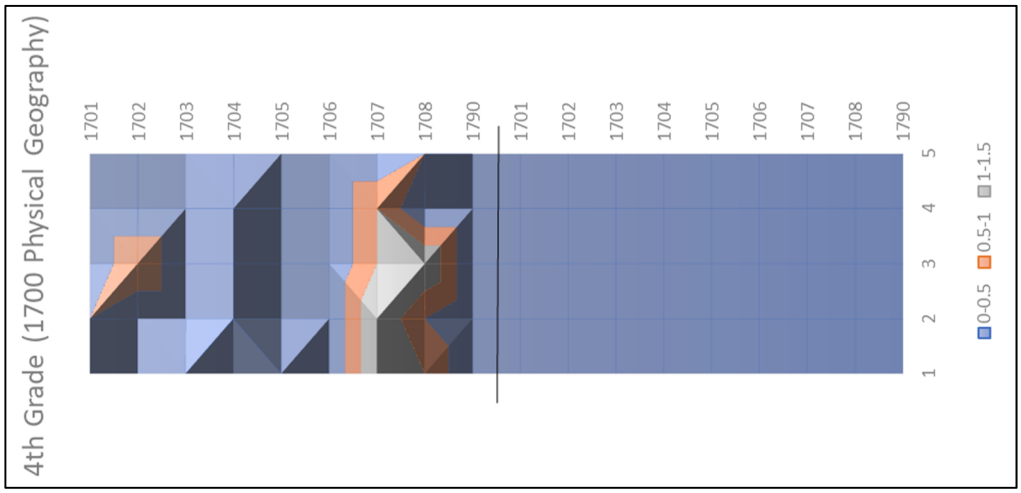


Figure 6.53. Geography Curriculum Correspondence between National Geography Standards and Iowa Social Studies Standards

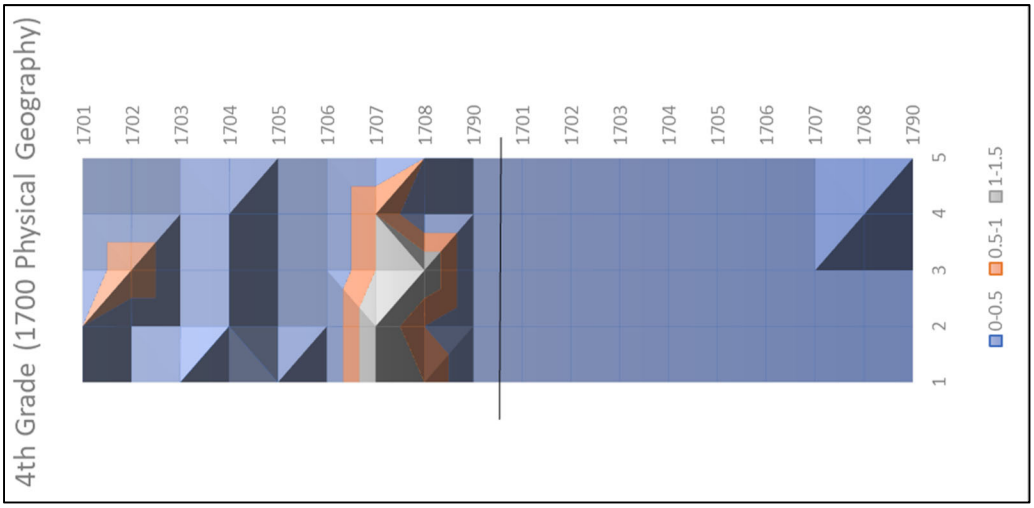


Figure 6.54. Geography Curriculum Correspondence between National Geography Standards and Kentucky Social Studies Standards

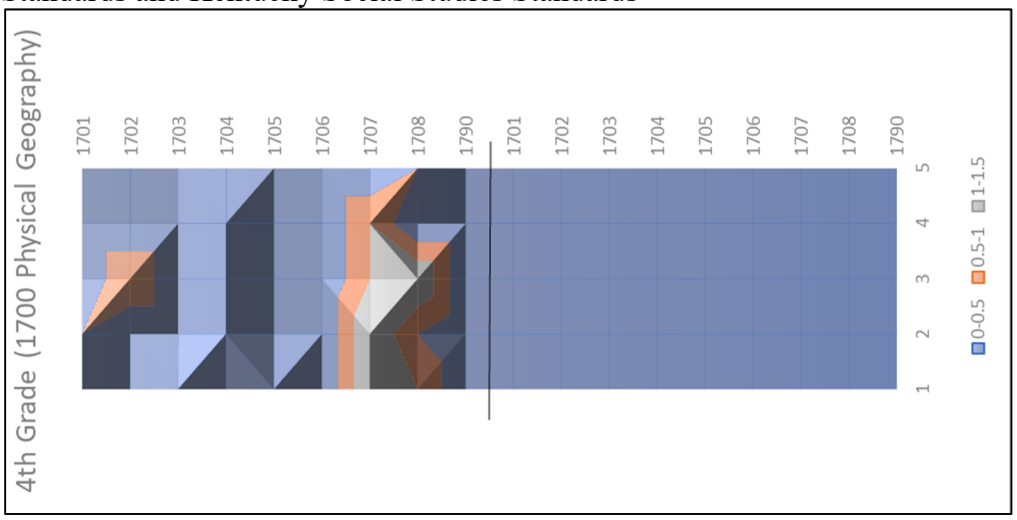


Figure 6.55. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

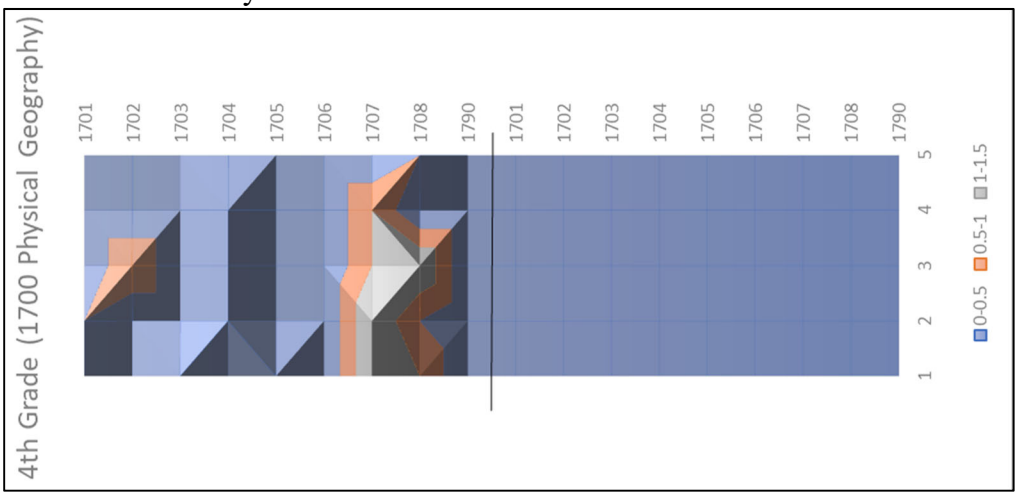


Figure 6.56. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

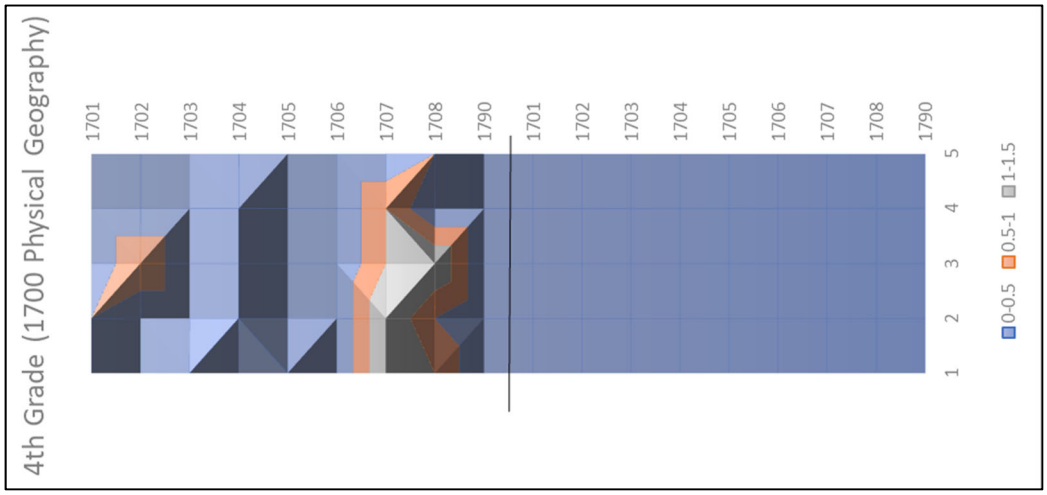


Figure 6.57. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

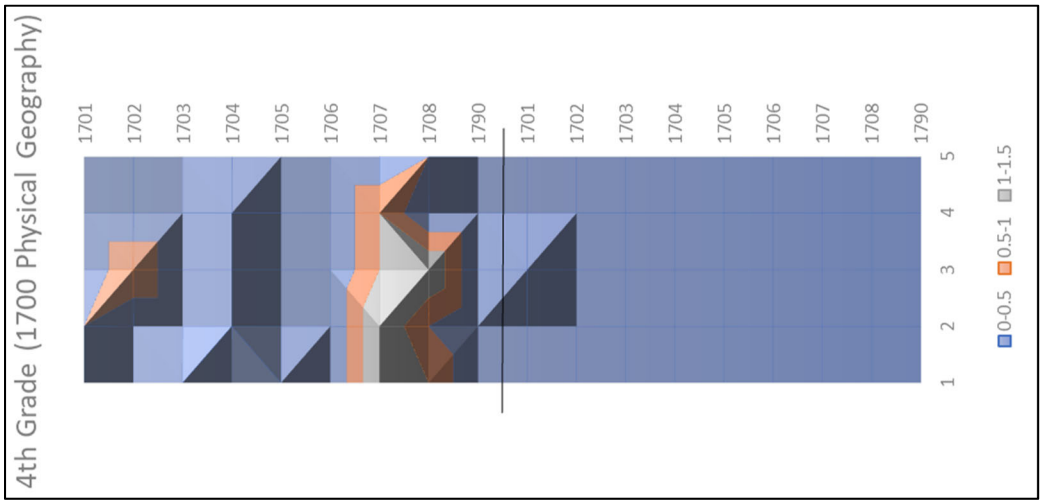


Figure 6.58. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

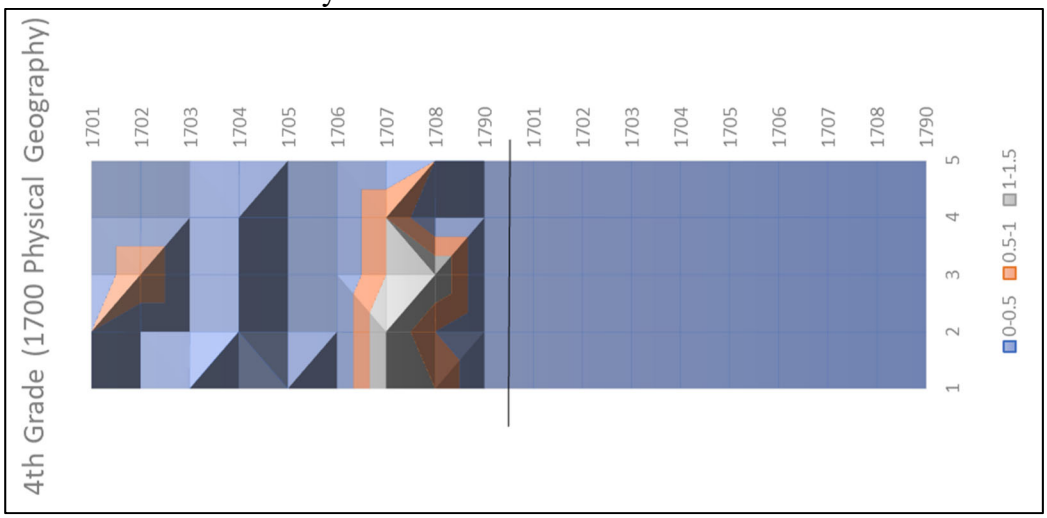


Figure 6.59. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

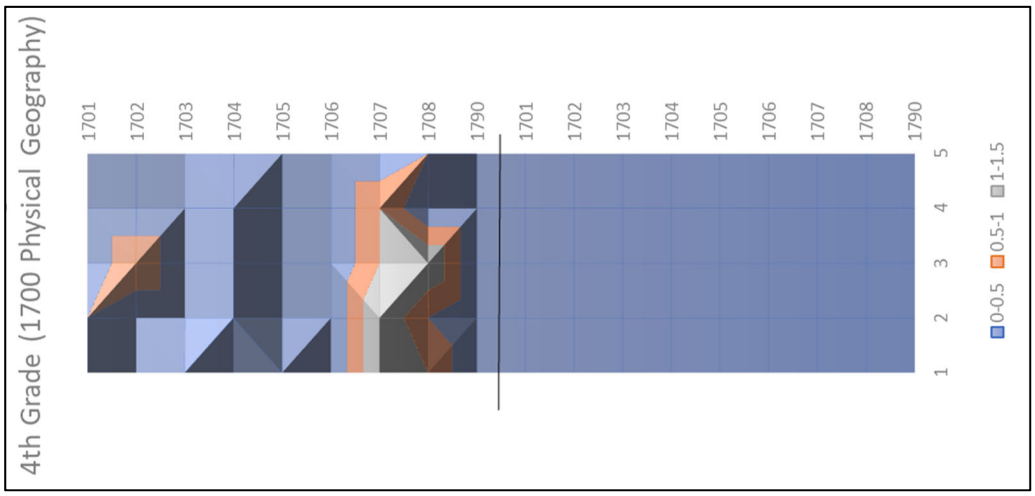


Figure 6.60. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

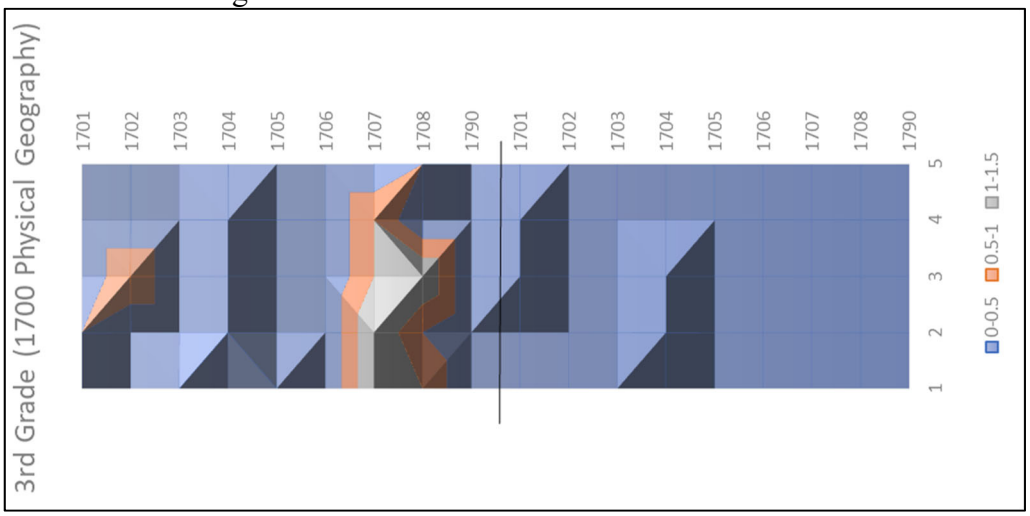


Figure 6.61. Geography Curriculum Correspondence between National Geography Standards and West Virginia (3rd grade) Social Studies Standards

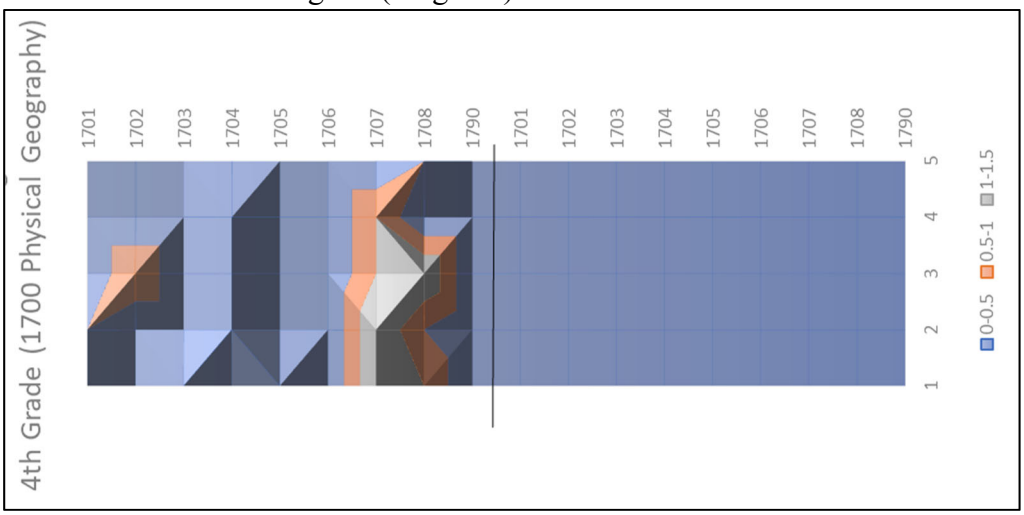


Figure 6.62. Geography Curriculum Correspondence between National Geography Standards and West Virginia (4th grade) Social Studies Standards

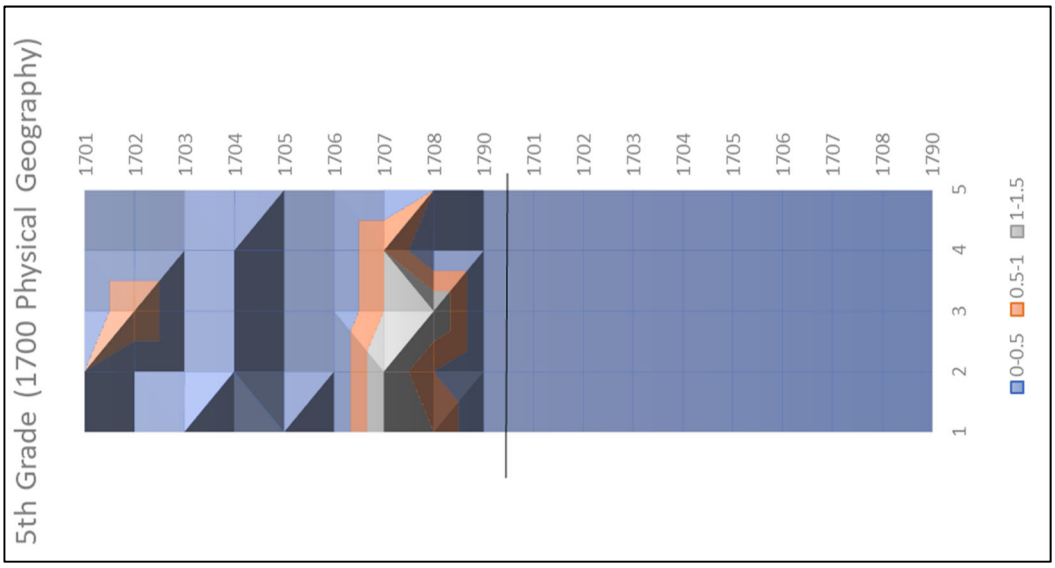


Figure 6.63. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 4 Inclusion of Human and Cultural Geography (1800)

Human and Cultural Geography was included relatively often in all states with an average alignment index of 0.2052 (Table 6.7). The index ranged from 0.0204 (Florida 4th grade) to 0.4898 (New Jersey). Georgia, South Dakota, and West Virginia (3rd grade) did not include any standards in this content area. Referring to Figures 6.64 – 6.83, the most common topic area was population (1801), migration (1802), transportation and communication networks (1804), trade and movement of ideas (1805), human settlements and urban systems (1806), conflict and cooperation over territory (1807), and cultural landscape (1809).

Table 6.7. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 4 Benchmark for Human and Cultural Geography

State	1800 Human and Cultural Geography
Arkansas	0.2558
Connecticut	0.3265
Delaware	0.2041
Florida (3rd)	0.2041
Florida (4th)	0.0204
Georgia	NA
Idaho	0.2948
Illinois	0.2245
Indiana	0.1837
Iowa	0.1020
Kentucky	0.1224
Maryland	0.3265
Missouri	0.1020
Nevada	0.1020
New Jersey	0.4898
South Dakota	NA
Virginia	0.1429
West Virginia (3rd)	NA
West Virginia (4th)	0.1020
Wyoming (5th)	0.2857
Average	*0.2052*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

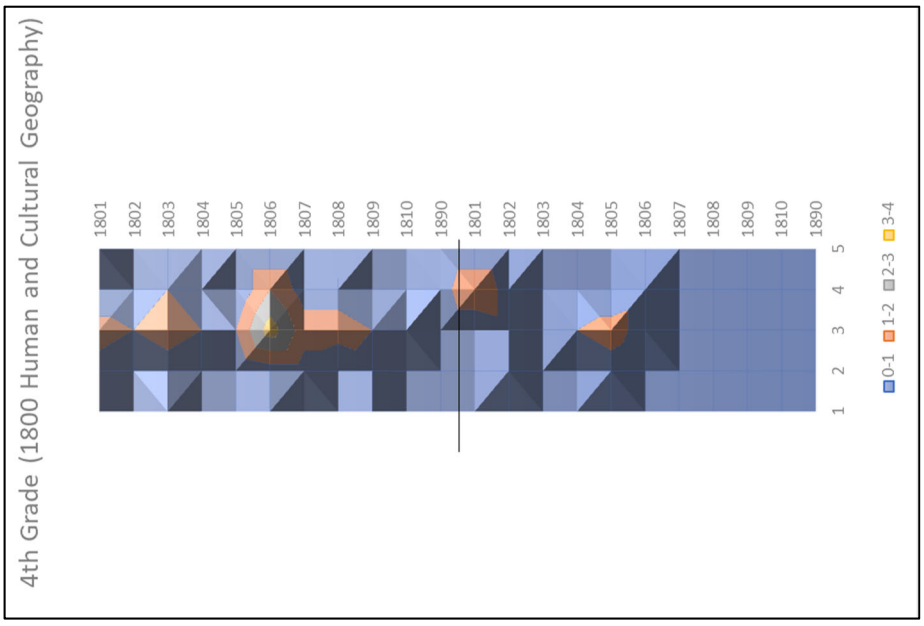


Figure 6.64. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

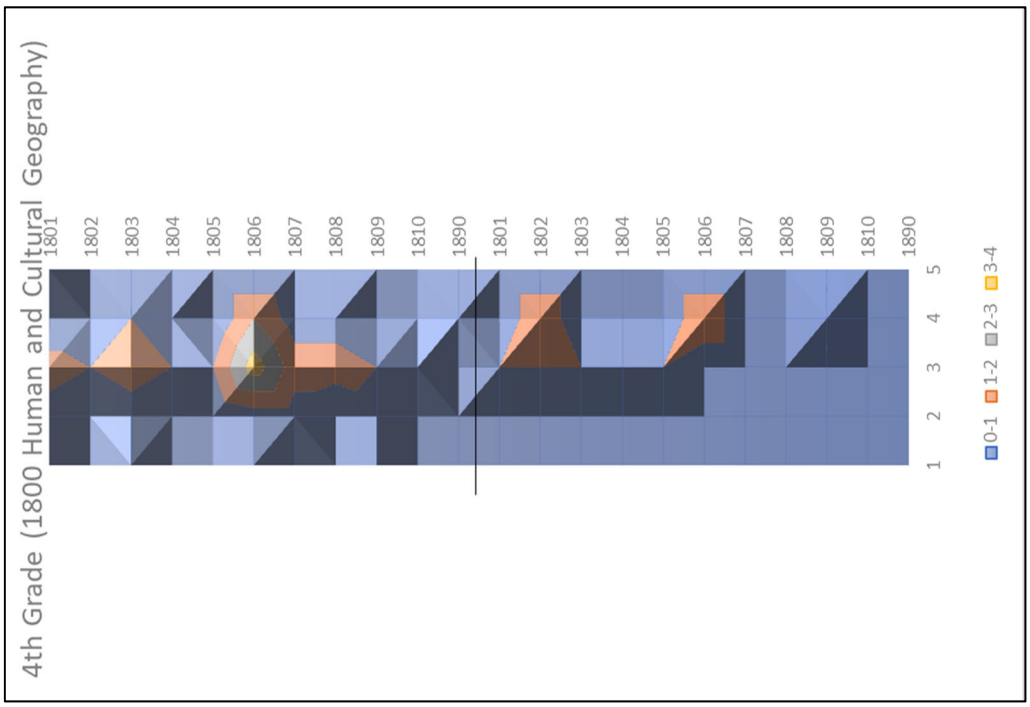


Figure 6.65. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

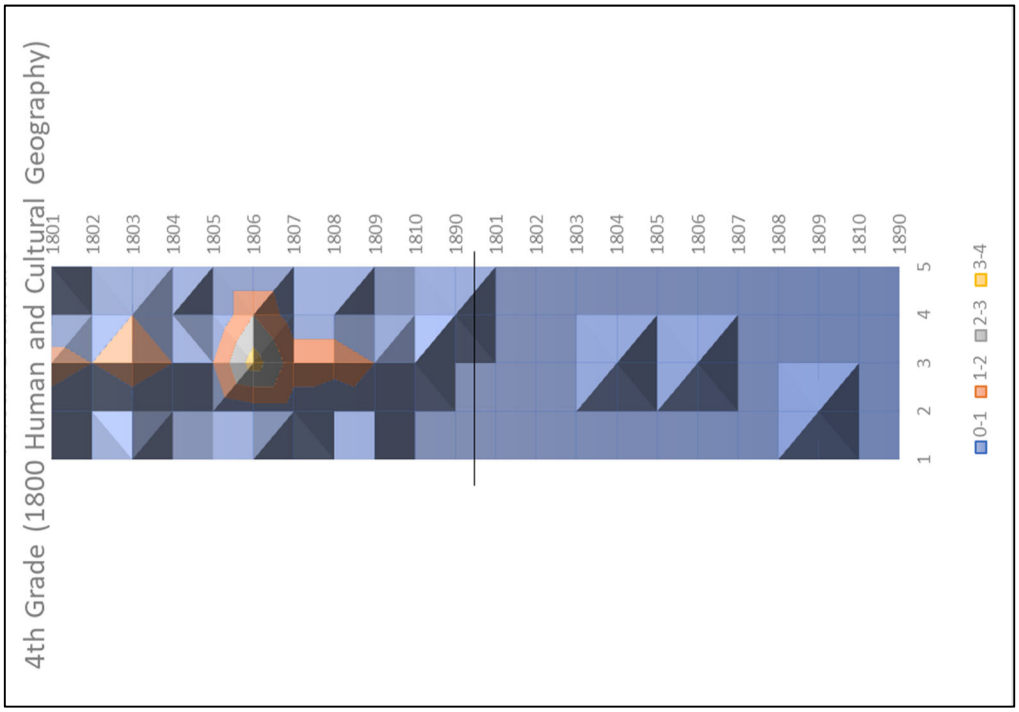


Figure 6.66. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

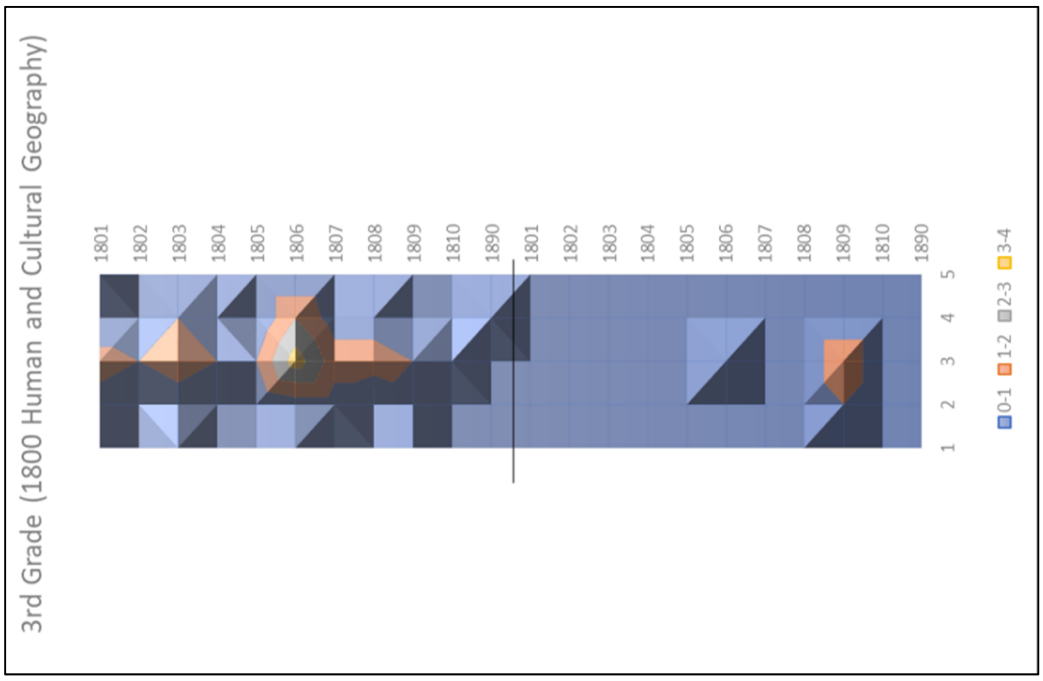


Figure 6.67. Geography Curriculum Correspondence between National Geography Standards and Florida (3rd grade) Social Studies Standards

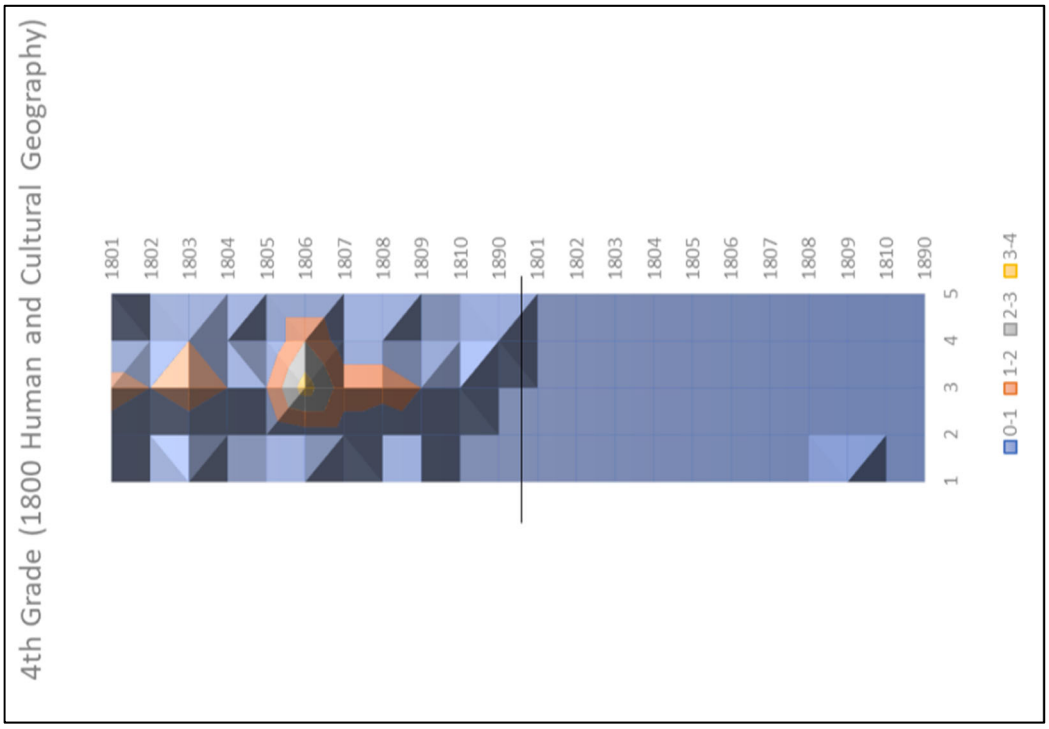


Figure 6.68. Geography Curriculum Correspondence between National Geography Standards and Florida (4th grade) Social Studies Standards

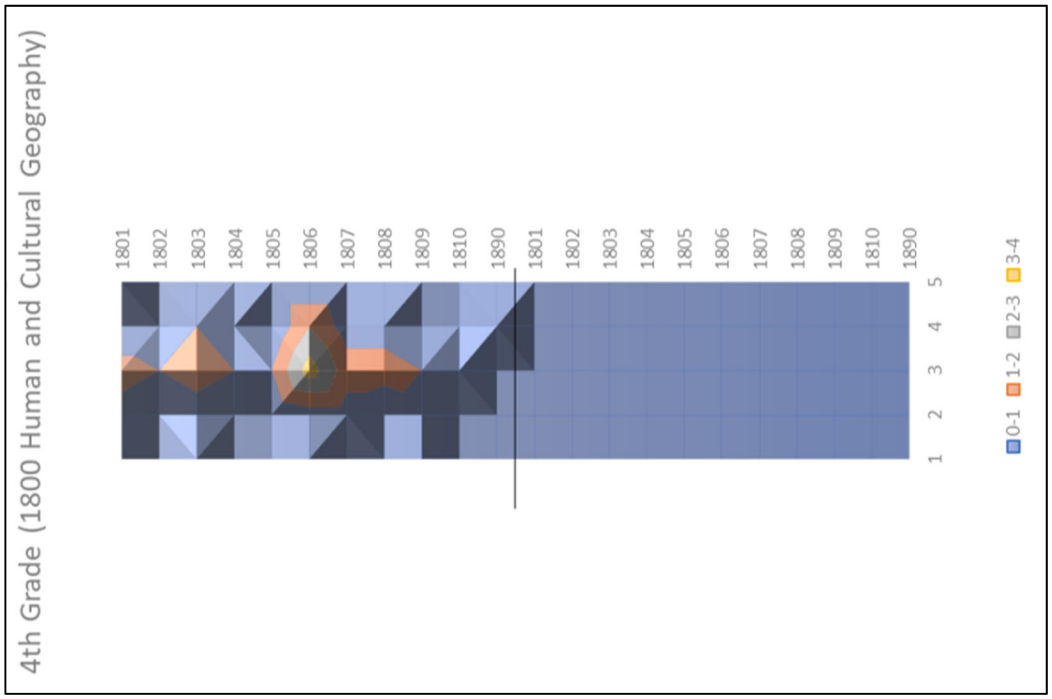


Figure 6.69. Geography Curriculum Correspondence between National Geography Standards and Georgia Social Studies Standards

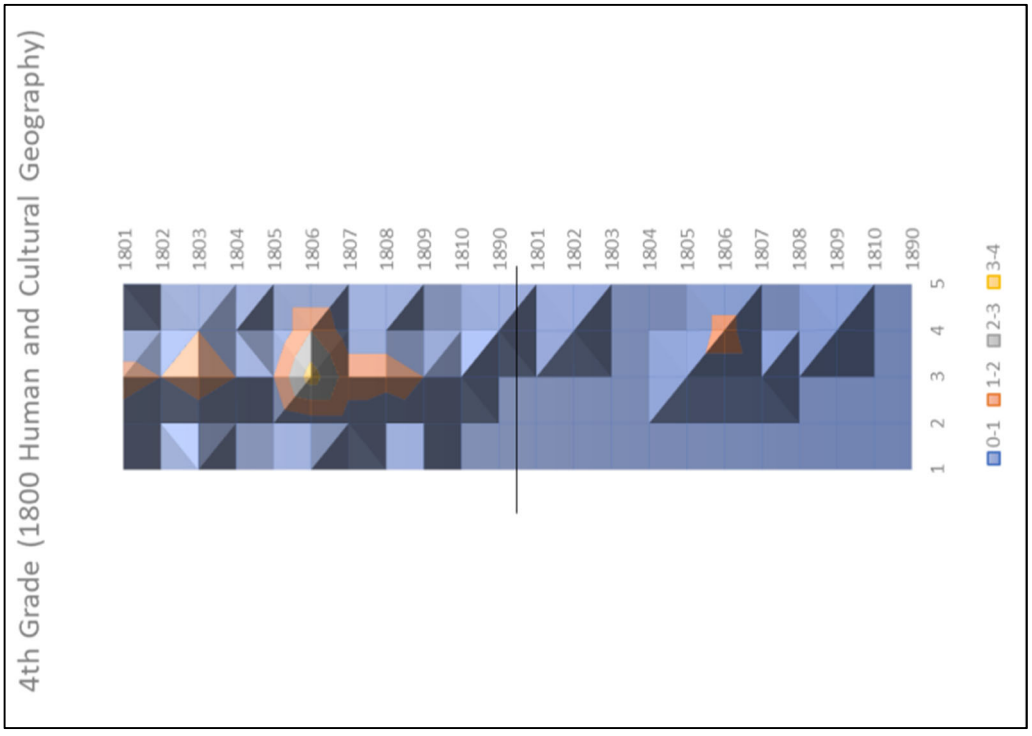


Figure 6.70. Geography Curriculum Correspondence between National Geography Standards and Idaho Social Studies Standards

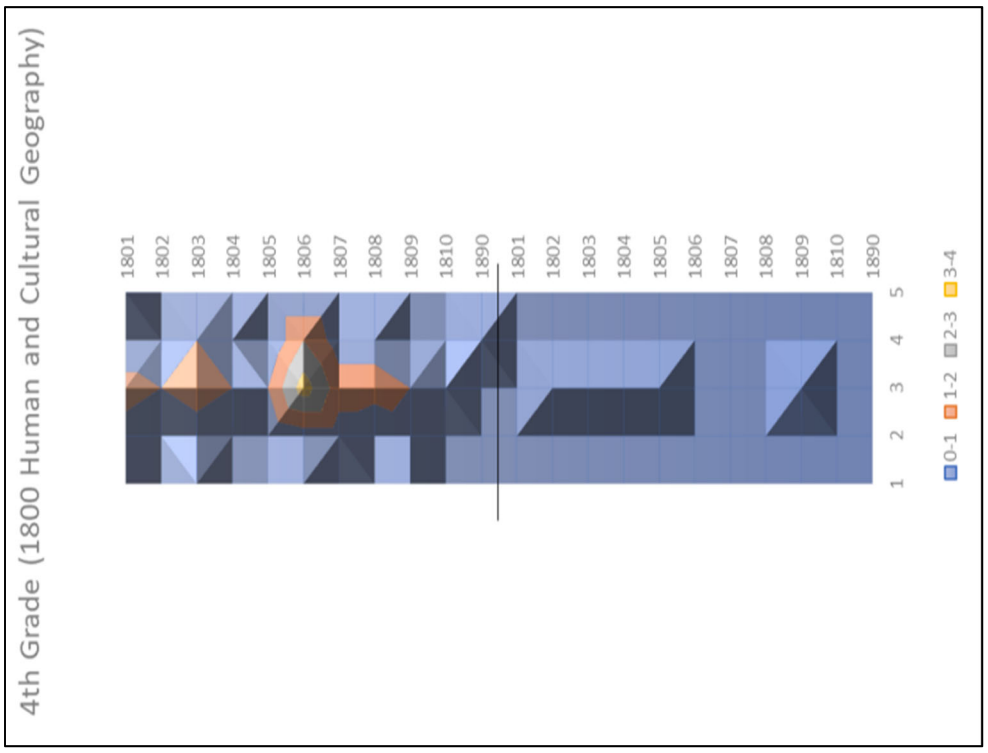


Figure 6.71. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

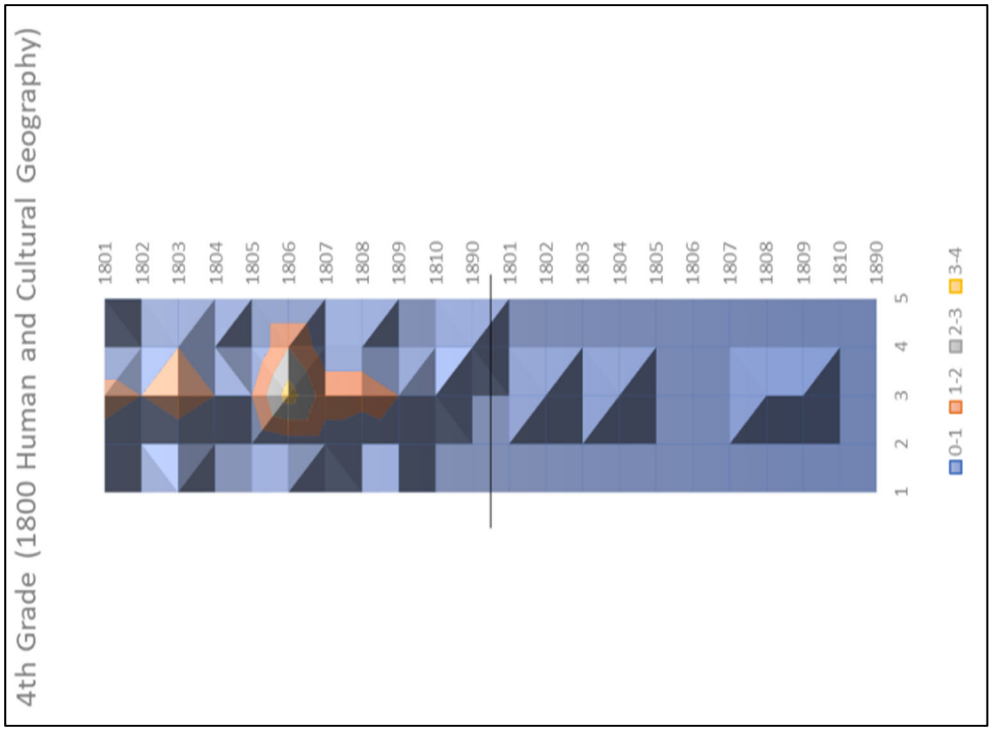


Figure 6.72. Geography Curriculum Correspondence between National Geography Standards and Indiana Social Studies Standards

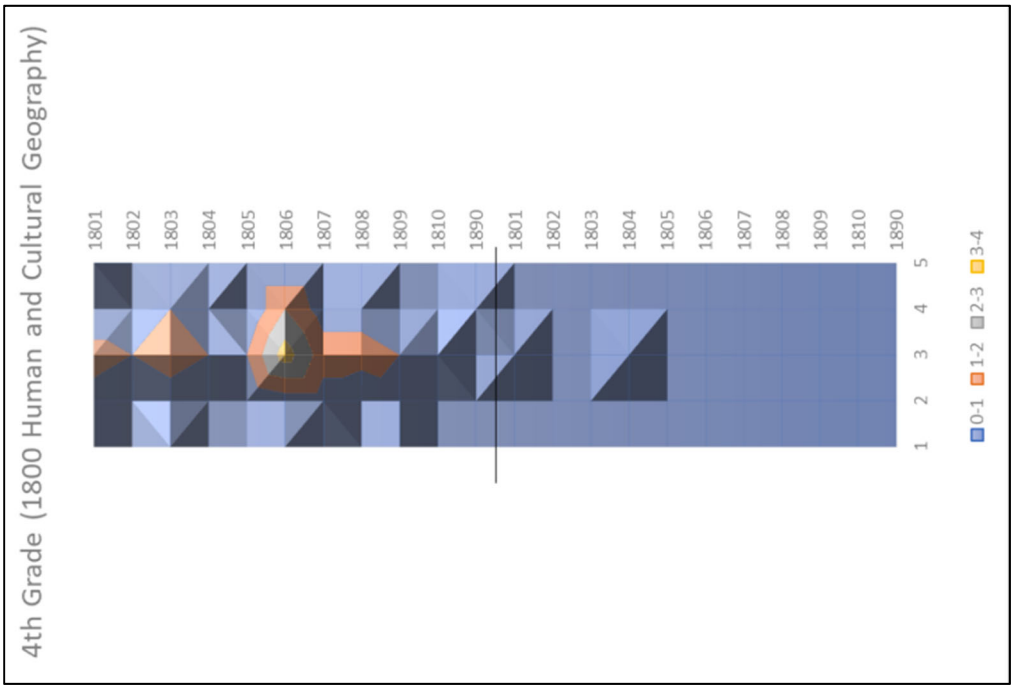


Figure 6.73. Geography Curriculum Correspondence between National Geography Standards and Iowa Social Studies Standards

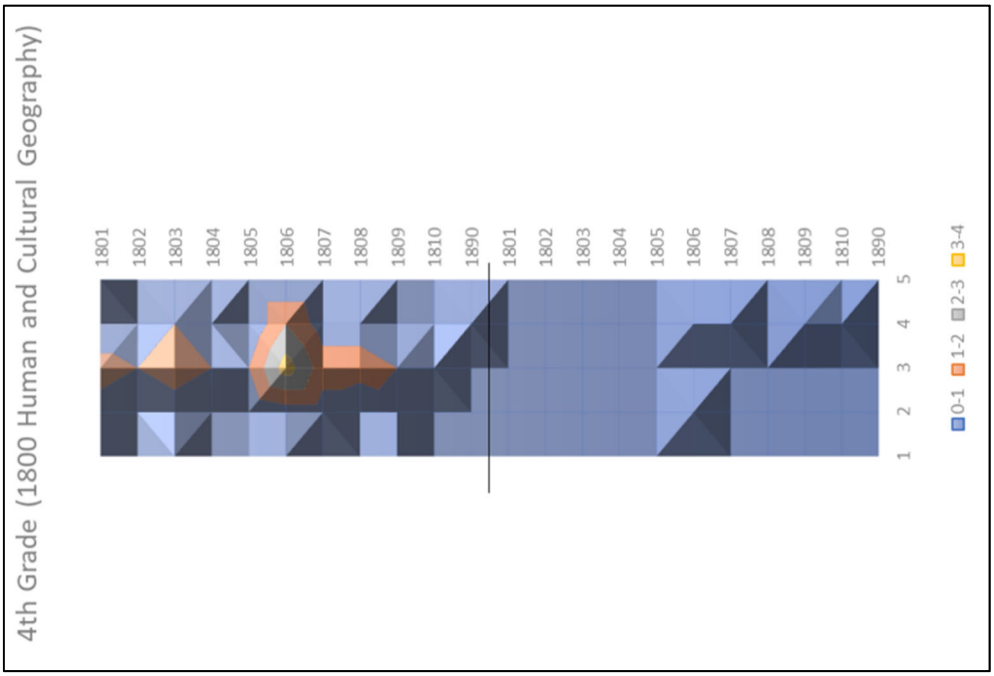


Figure 6.74. Geography Curriculum Correspondence between National Geography Standards and Kentucky Social Studies Standards

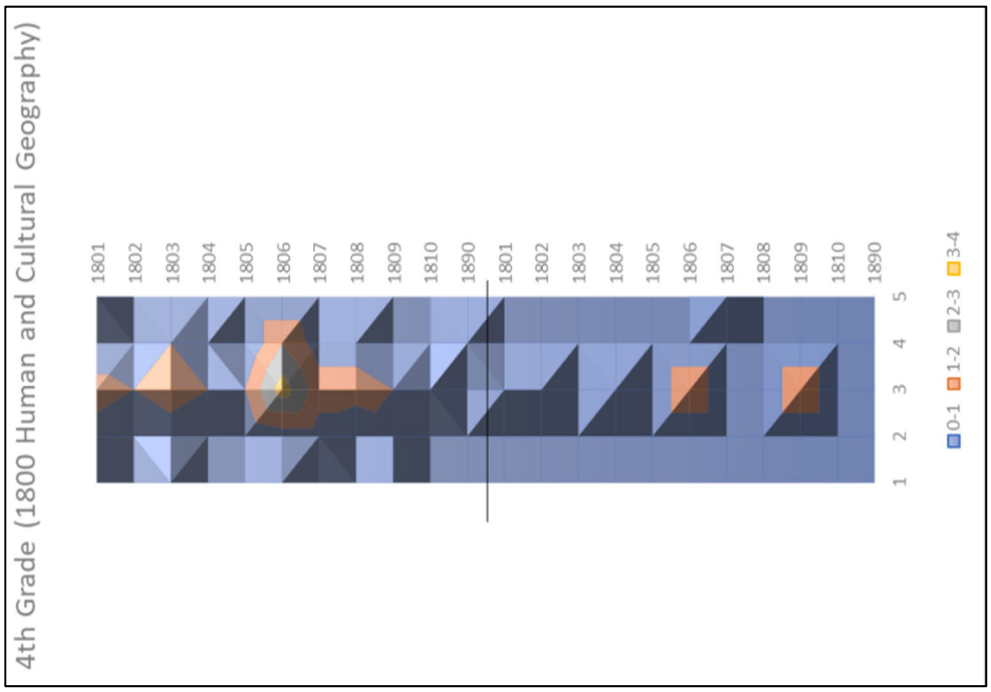


Figure 6.75. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

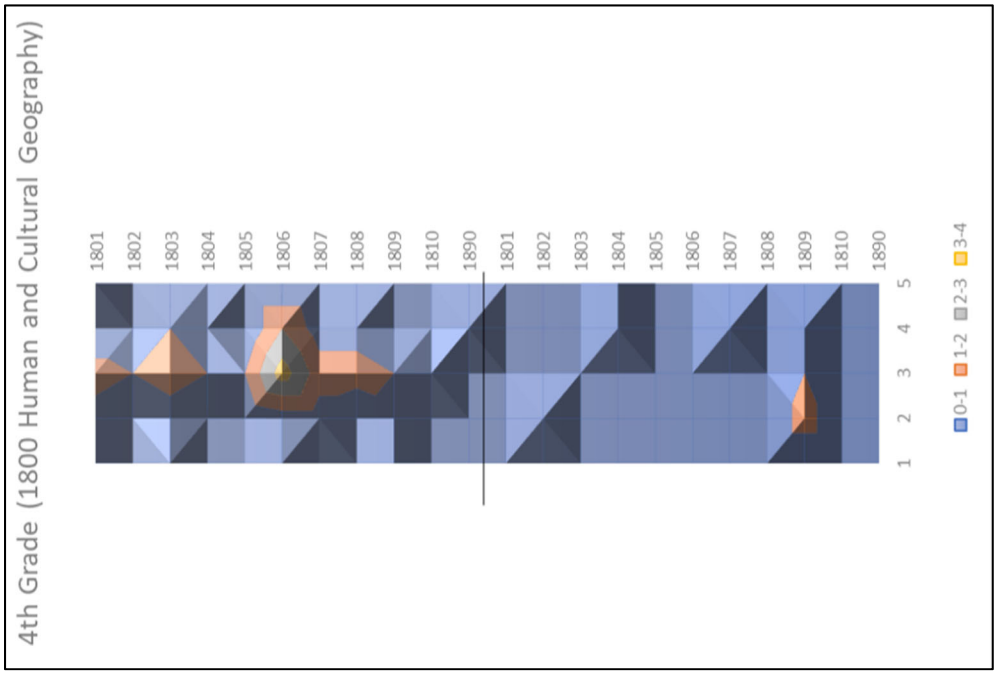


Figure 6.76. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

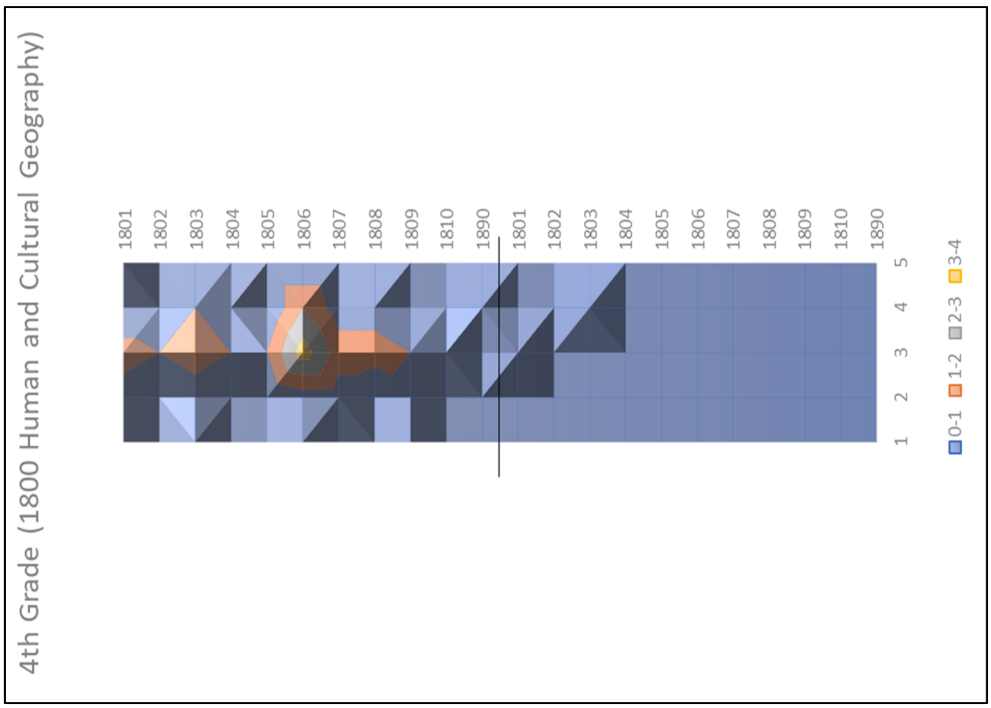


Figure 6.77. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

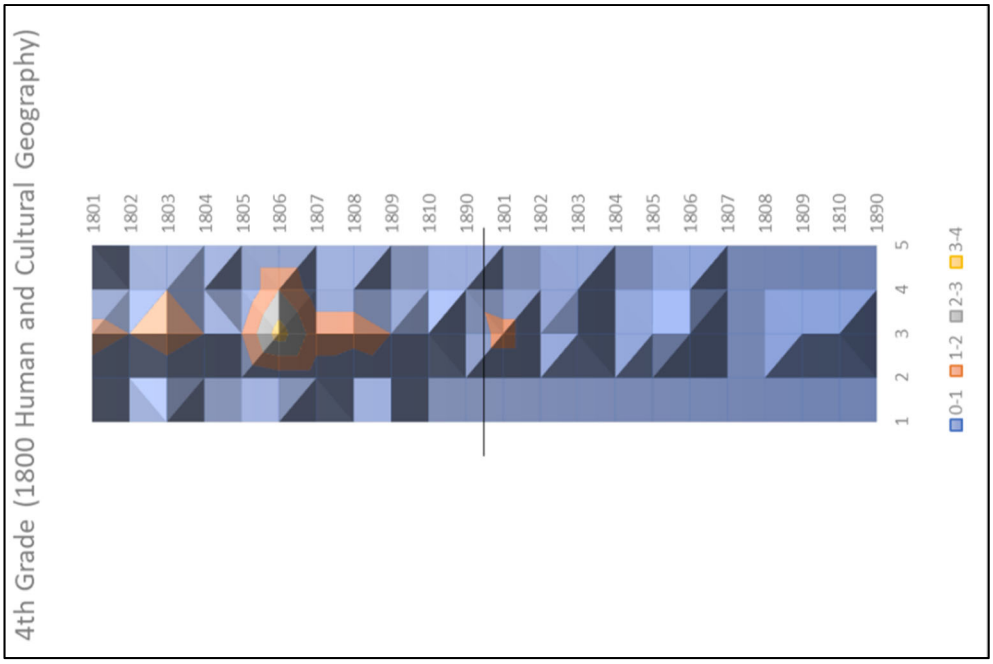


Figure 6.78. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

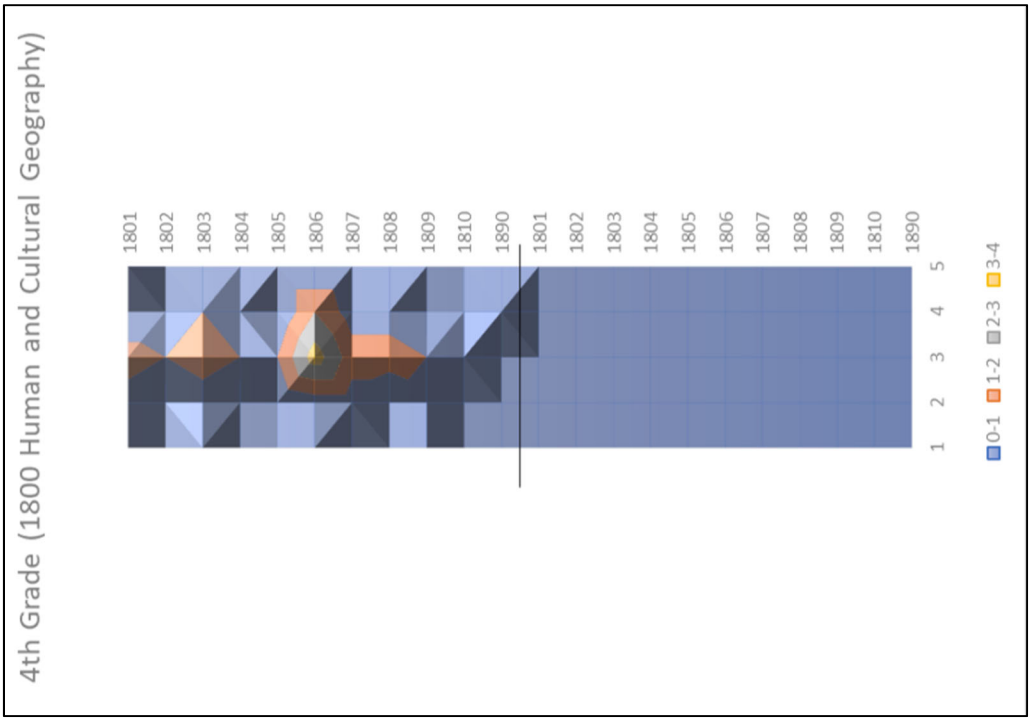


Figure 6.79. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

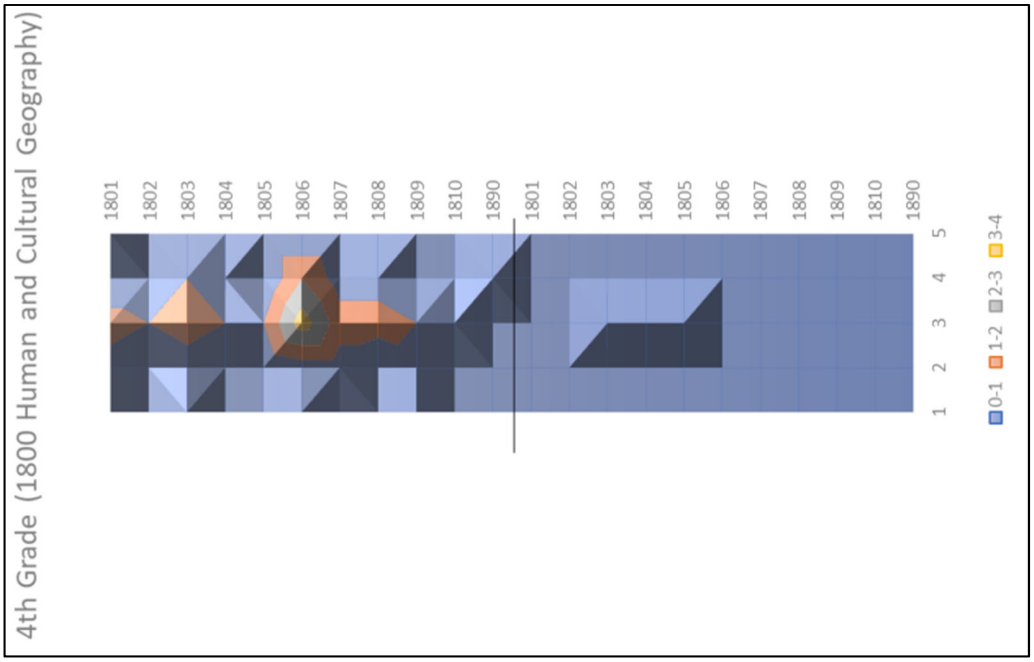


Figure 6.80. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

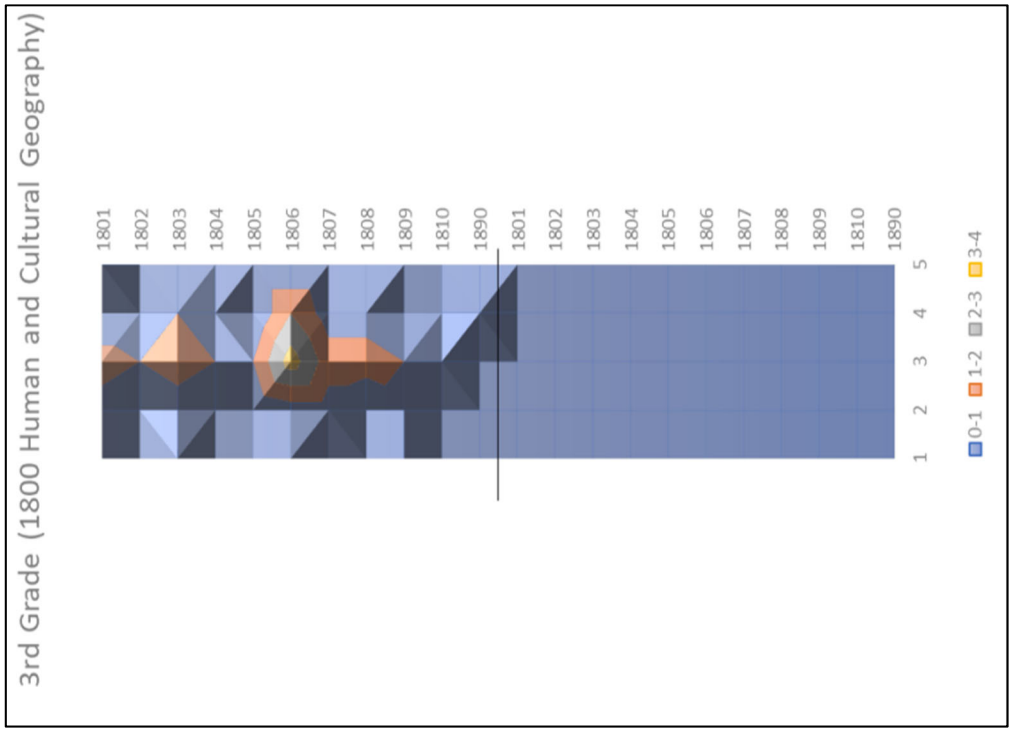


Figure 6.81. Geography Curriculum Correspondence between National Geography Standards and West Virginia (3rd grade) Social Studies Standards

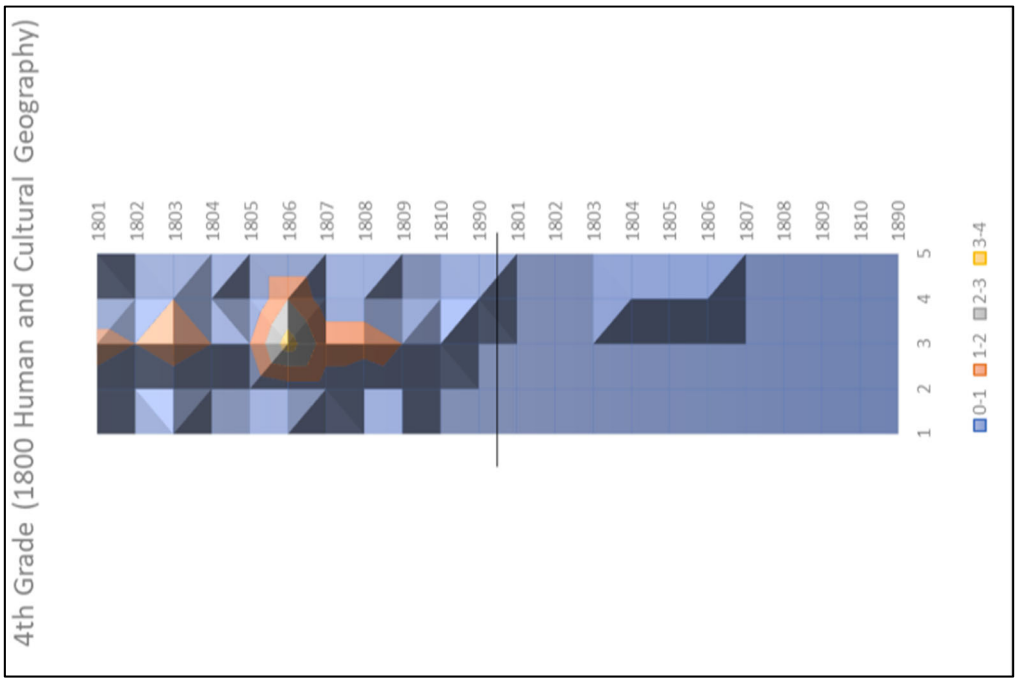


Figure 6.82. Geography Curriculum Correspondence between National Geography Standards and West Virginia (4th grade) Social Studies Standards

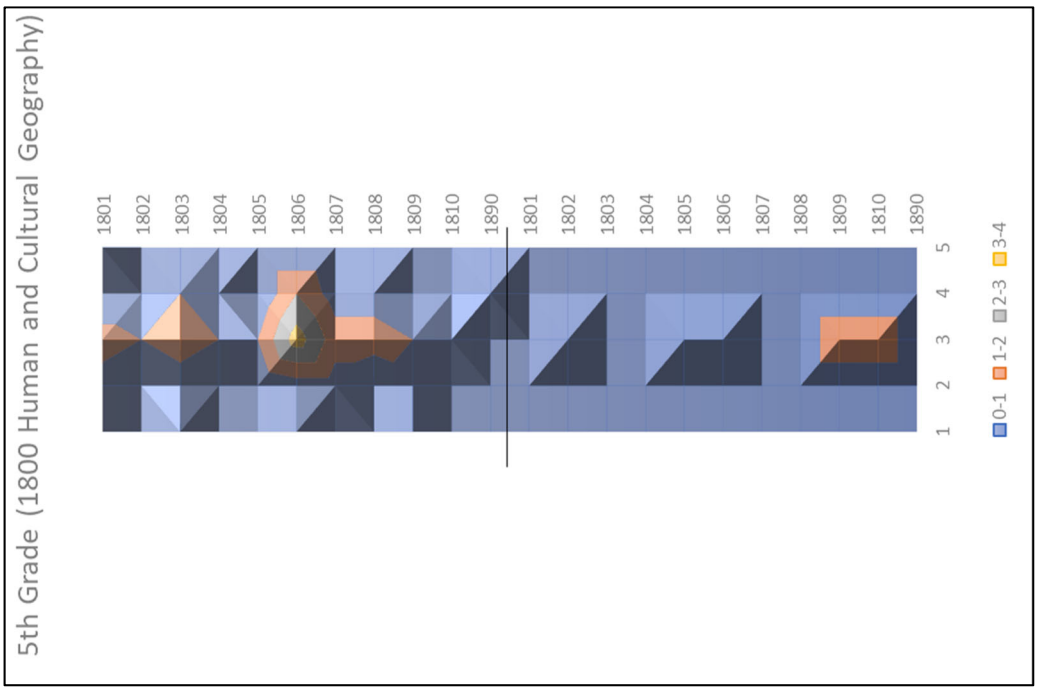


Figure 6.83. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 4 Inclusion of Human/Environment Interactions (1900)

As far as depth and breadth of coverage in the national geography standards, Human/Environment Interactions includes very few codes as compared to the other general topic areas. The national geography standards focus dominantly on human modification of, and adaptation to, the physical environment (1901) and resources and energy use (1903). This carries over into the alignment index for the majority of states which are also dominated by human modification of, and adaptation to, the physical environment (Figure 6.84 – 6.103). As shown in Table 6.8, the alignment index ranged from 0.0294 (Florida 3rd grade and Georgia) to 0.3529 (Nevada and Wyoming 5th grade), with an average is 0.2140. Three states did not include any human/environment interaction standards: Florida 4th grade, Illinois, and South Dakota.

Table 6.8. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 4 Benchmark for Human/Environment Interaction

State	1900 Human/ Environment Interaction
Arkansas	0.2176
Connecticut	0.2059
Delaware	0.3235
Florida (3rd)	0.0294
Florida (4th)	NA
Georgia	0.0294
Idaho	0.1176
Illinois	NA
Indiana	0.2647
Iowa	0.1471
Kentucky	0.0882
Maryland	0.2647
Missouri	0.0588
Nevada	0.3529
New Jersey	0.3316
South Dakota	NA
Virginia	0.2647
West Virginia (3rd)	0.2941
West Virginia (4th)	0.2941
Wyoming (5th)	0.3529
Average	*0.2140*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

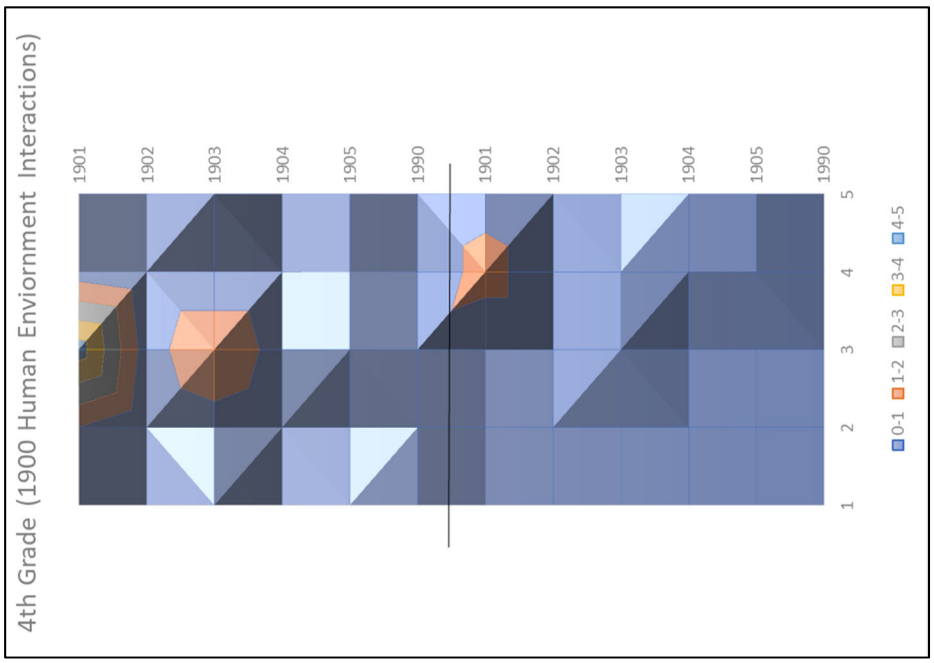


Figure 6.84. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

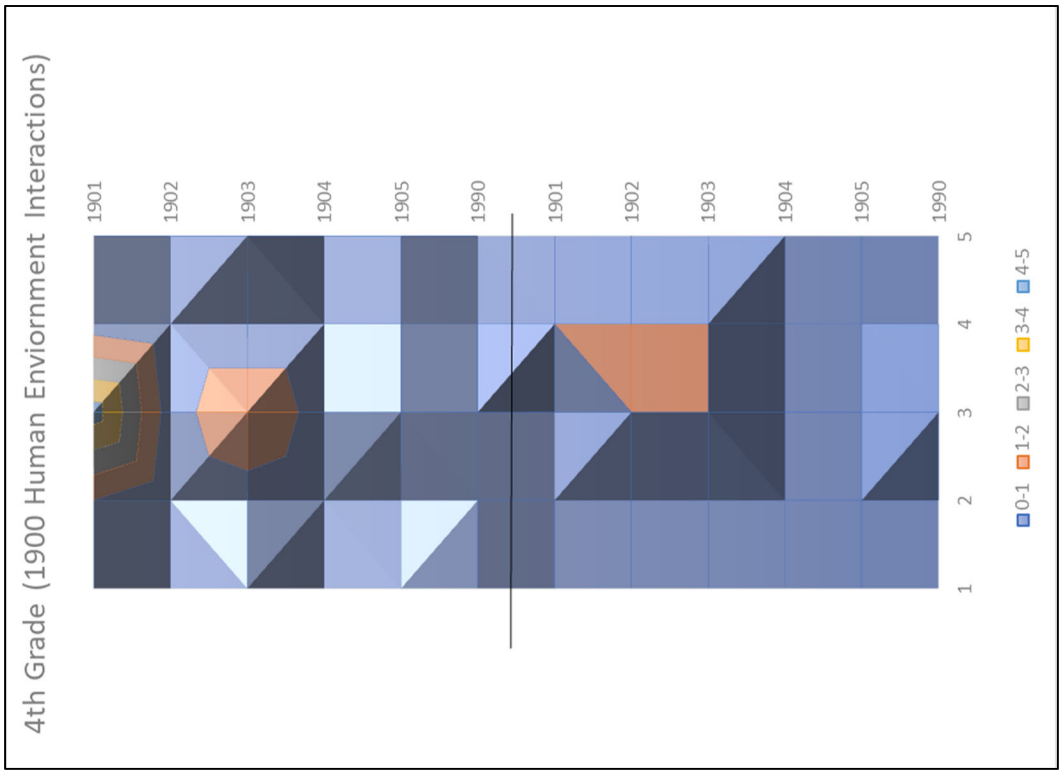


Figure 6.85. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

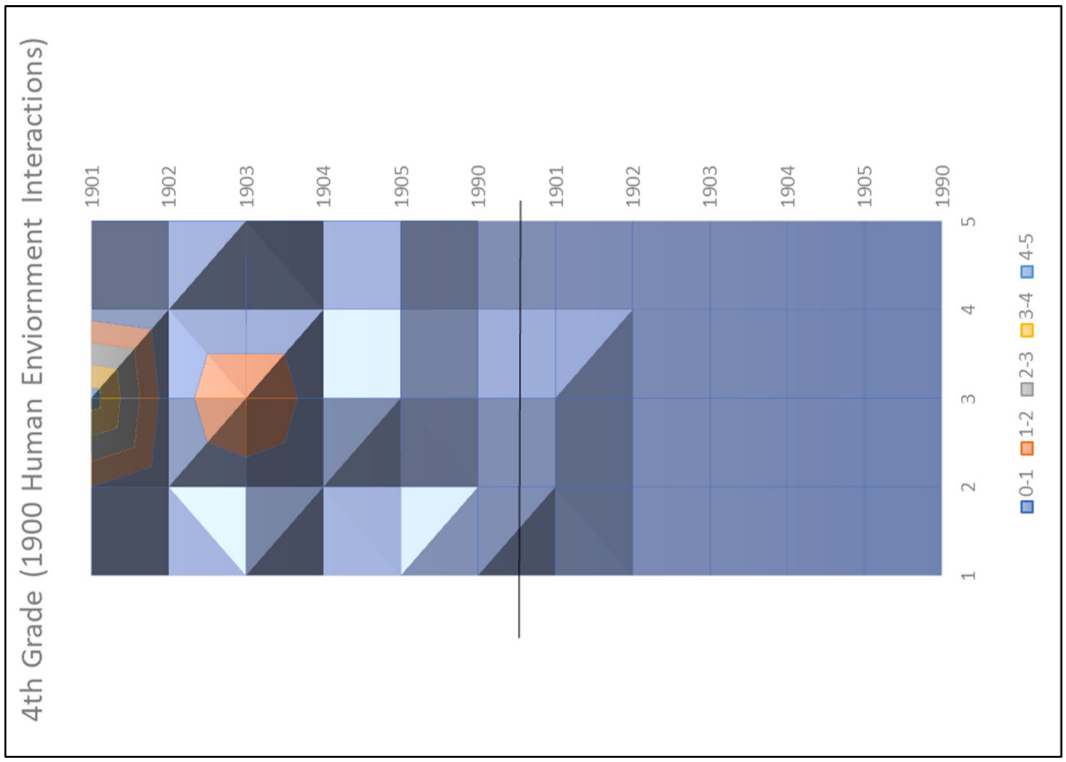


Figure 6.86. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

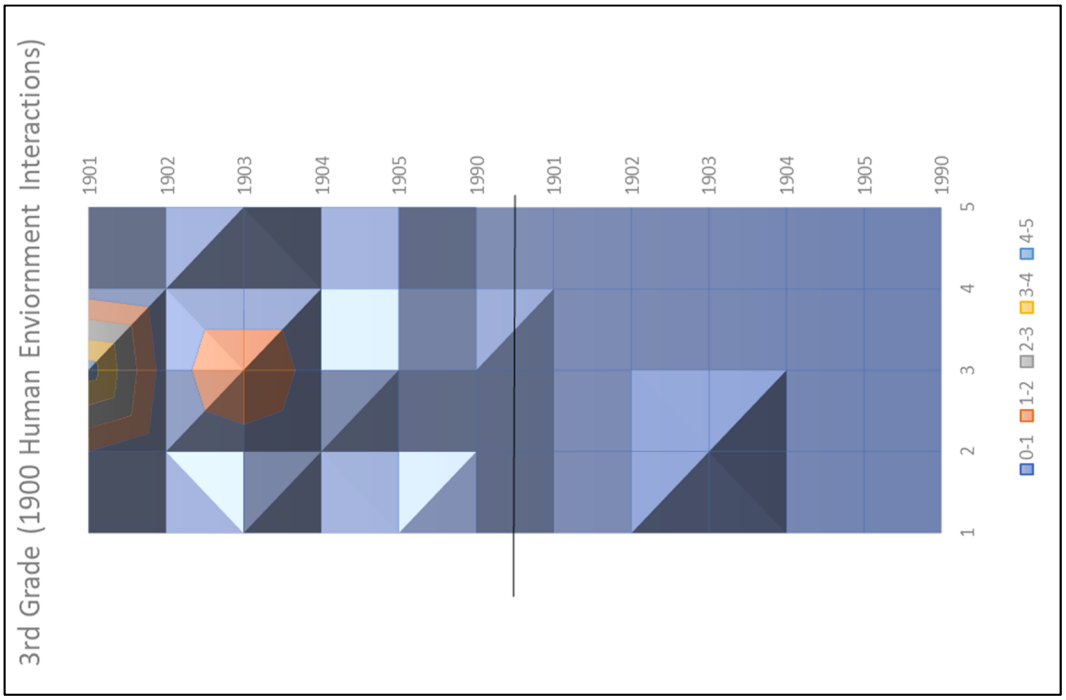


Figure 6.87. Geography Curriculum Correspondence between National Geography Standards and Florida (3rd grade) Social Studies Standards

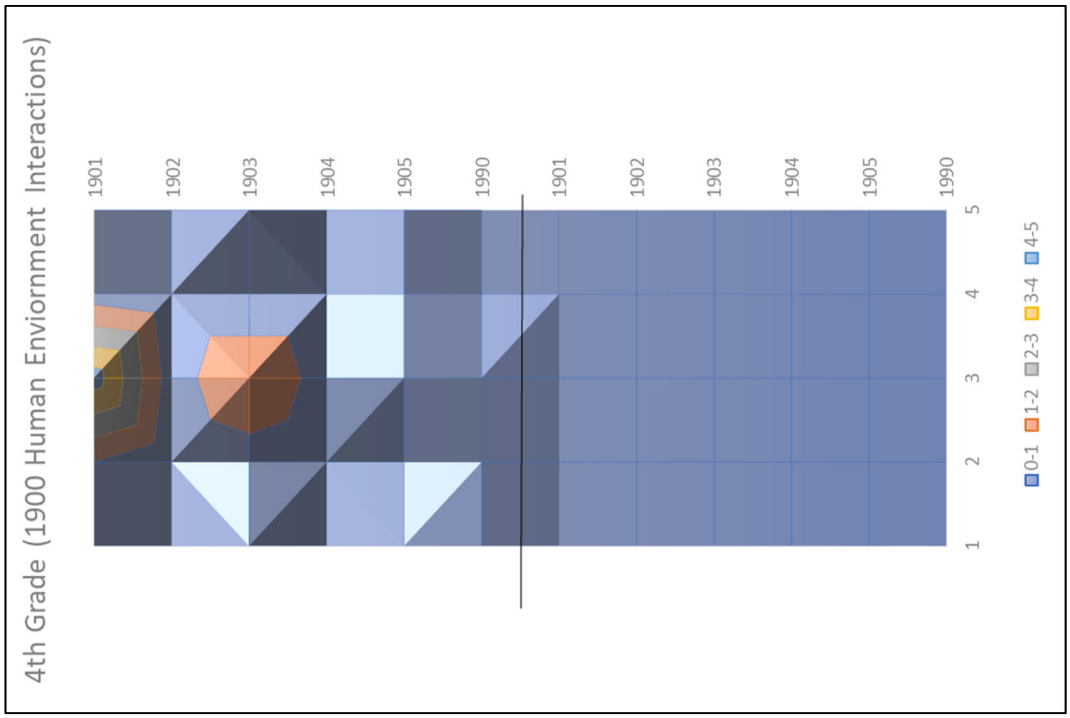


Figure 6.88. Geography Curriculum Correspondence between National Geography Standards and Florida (4th grade) Social Studies Standards

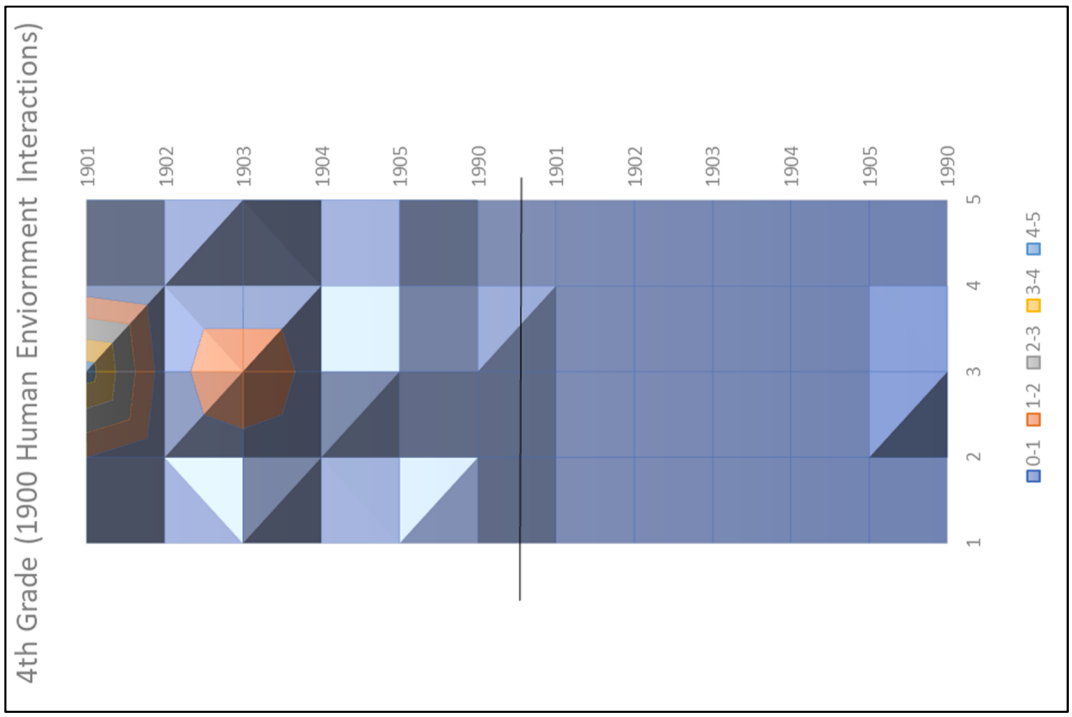


Figure 6.89. Geography Curriculum Correspondence between National Geography Standards and Georgia Social Studies Standards

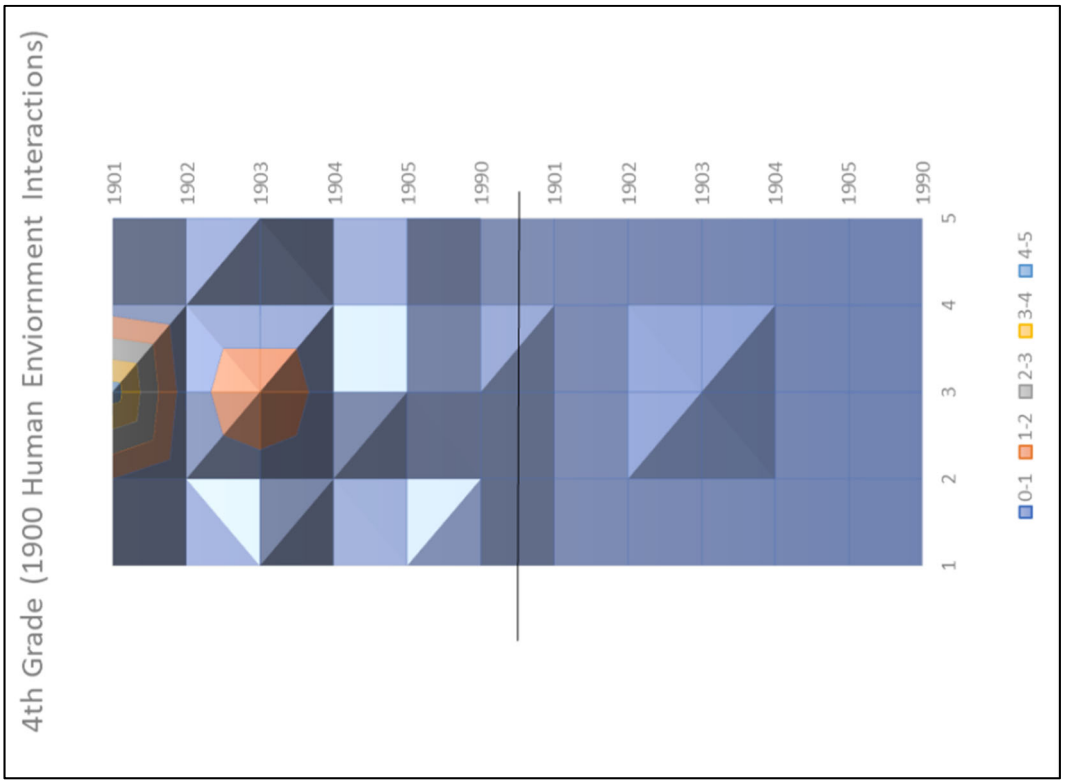


Figure 6.90. Geography Curriculum Correspondence between National Geography Standards and Idaho Social Studies Standards

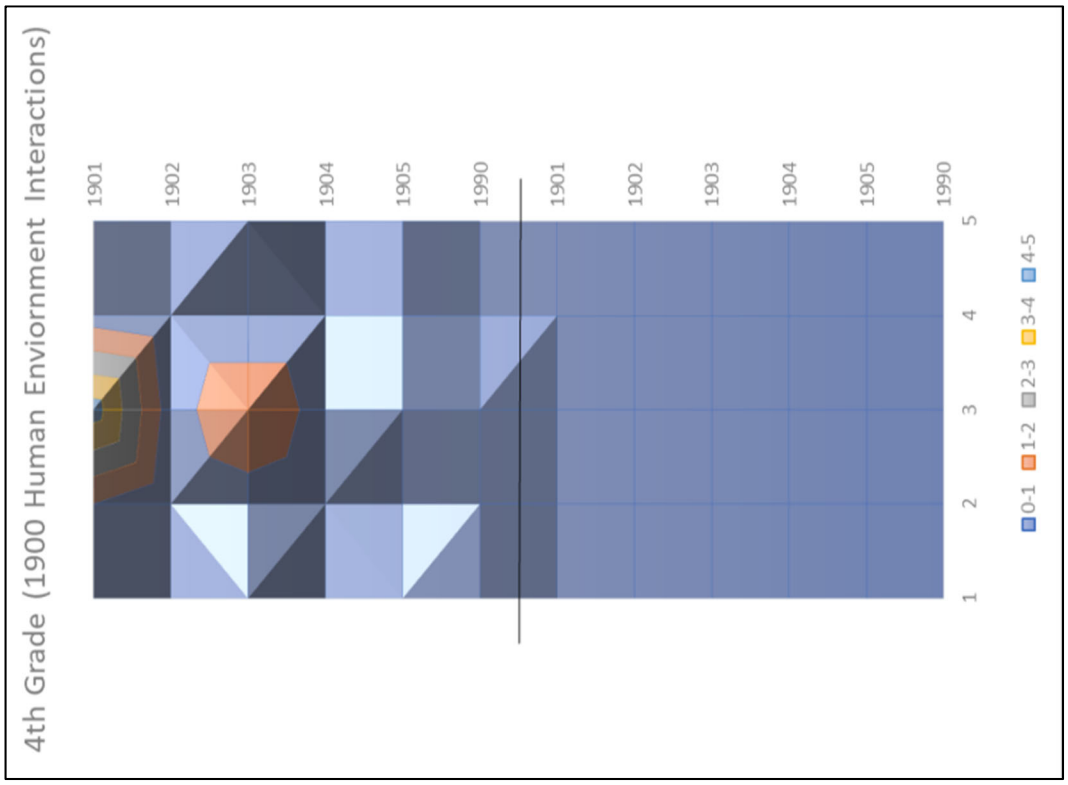


Figure 6.91. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

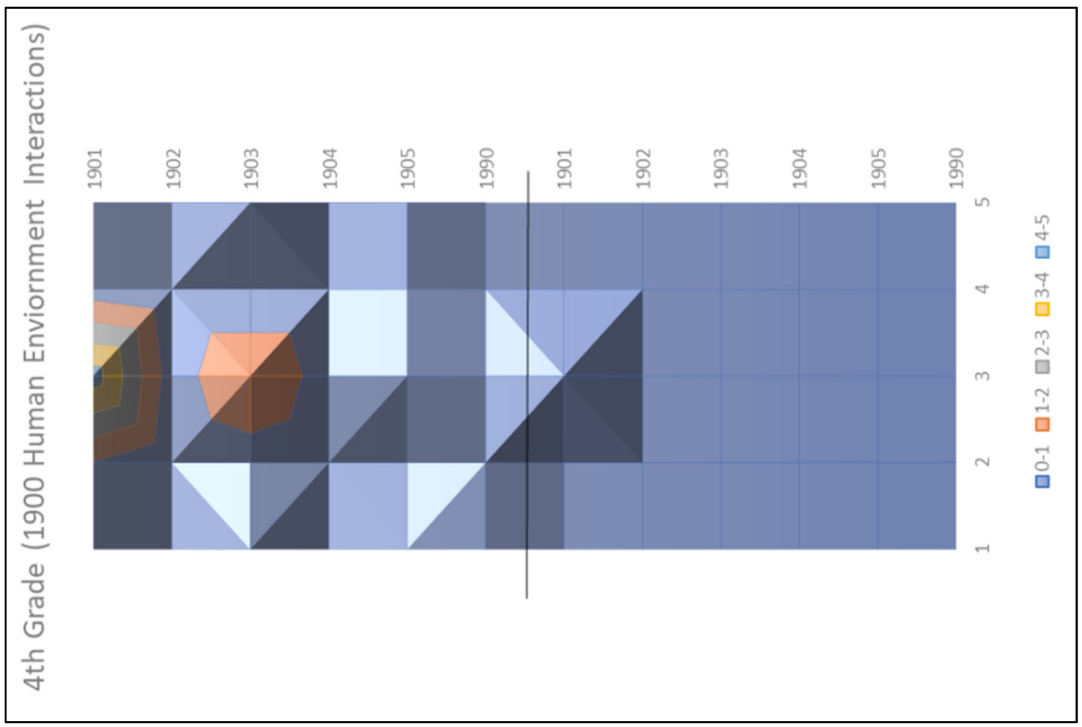


Figure 6.92. Geography Curriculum Correspondence between National Geography Standards and Indiana Social Studies Standards

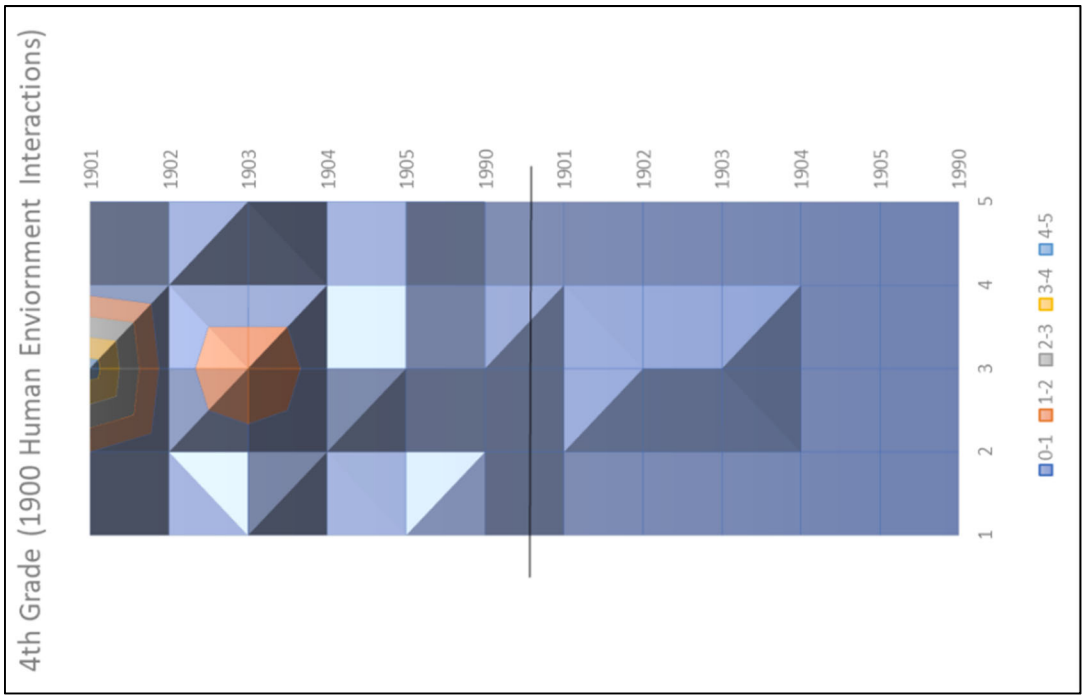


Figure 6.93. Geography Curriculum Correspondence between National Geography Standards and Iowa Social Studies Standards

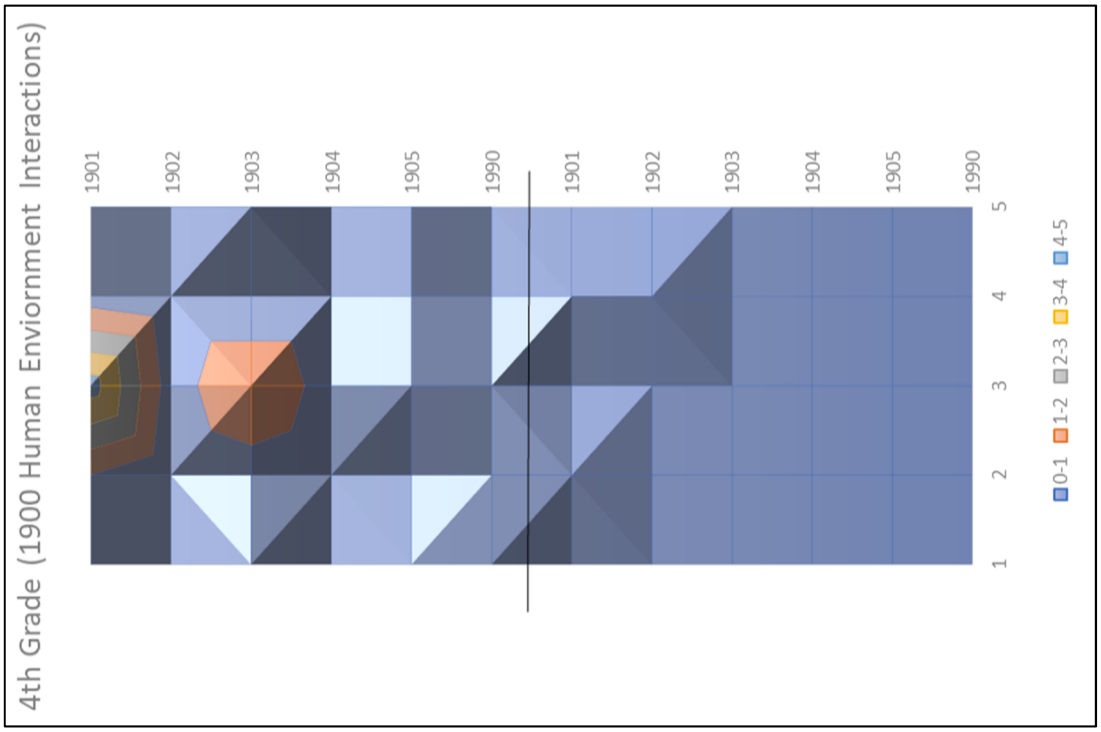


Figure 6.94. Geography Curriculum Correspondence between National Geography Standards and Kentucky Social Studies Standards

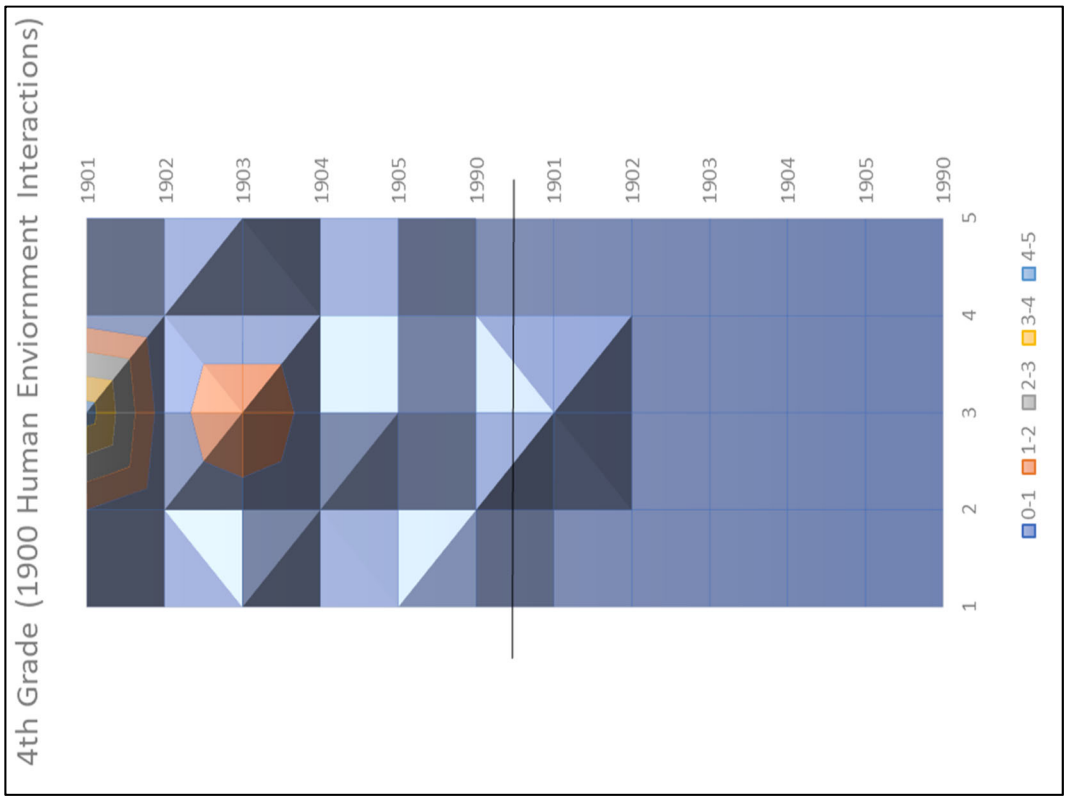


Figure 6.95. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

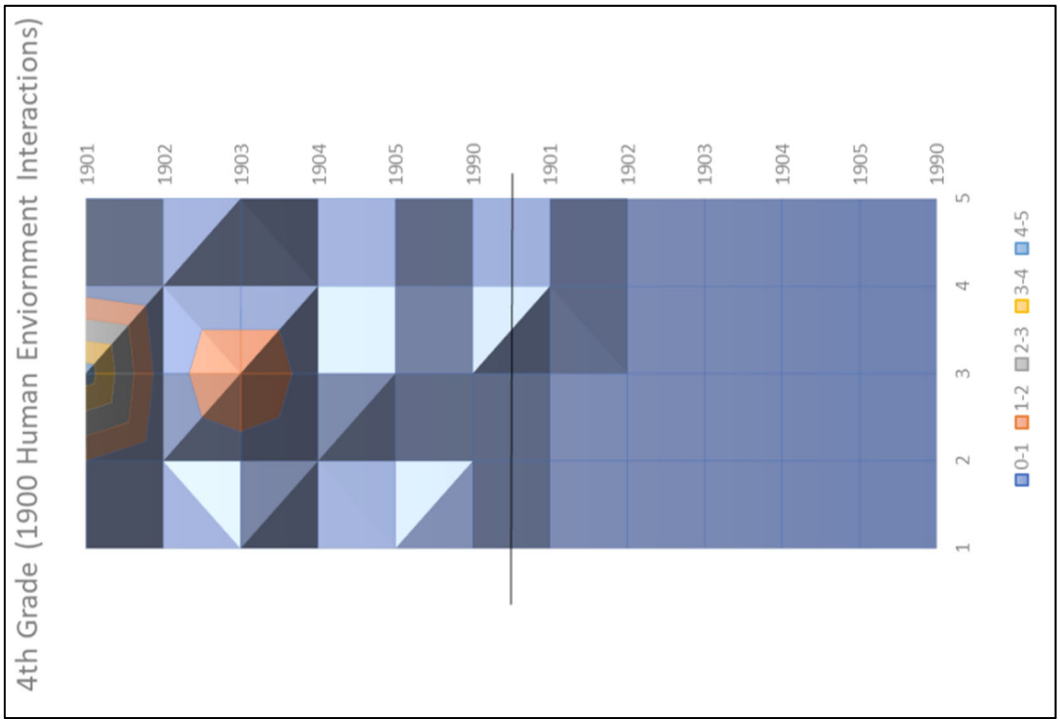


Figure 6.96. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

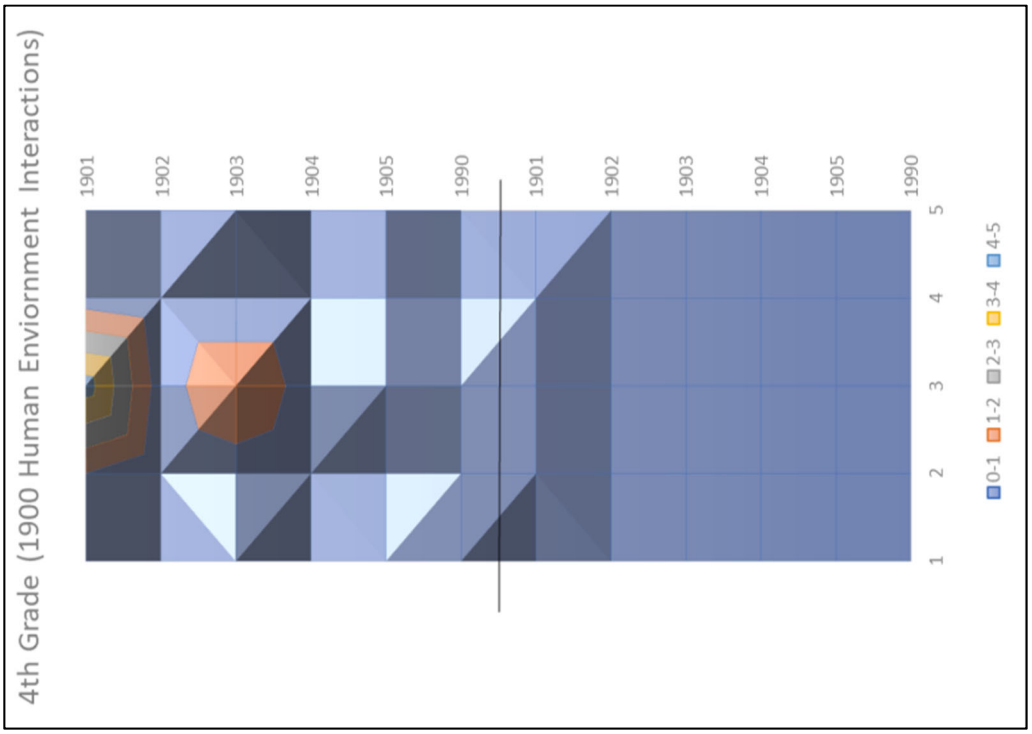


Figure 6.97. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

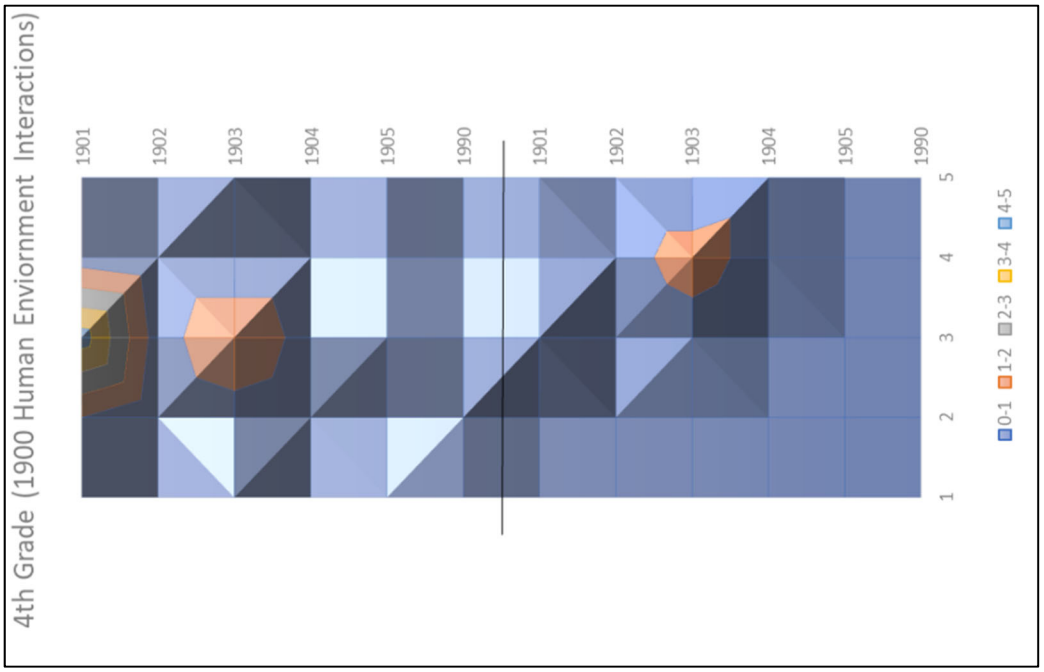


Figure 6.98. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

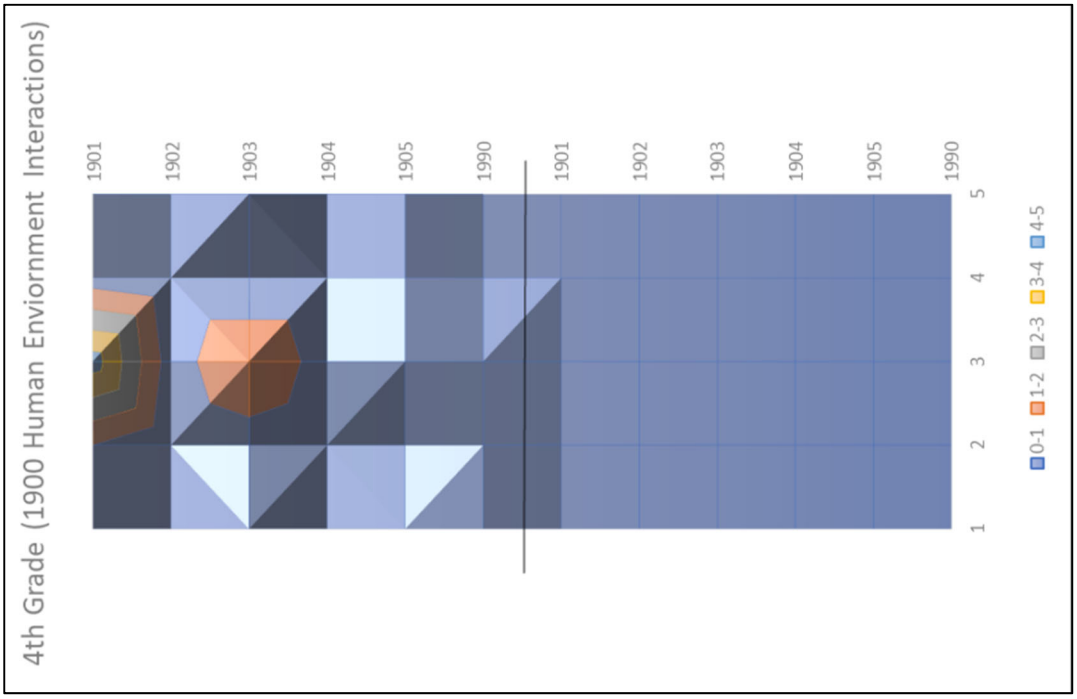


Figure 6.99. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

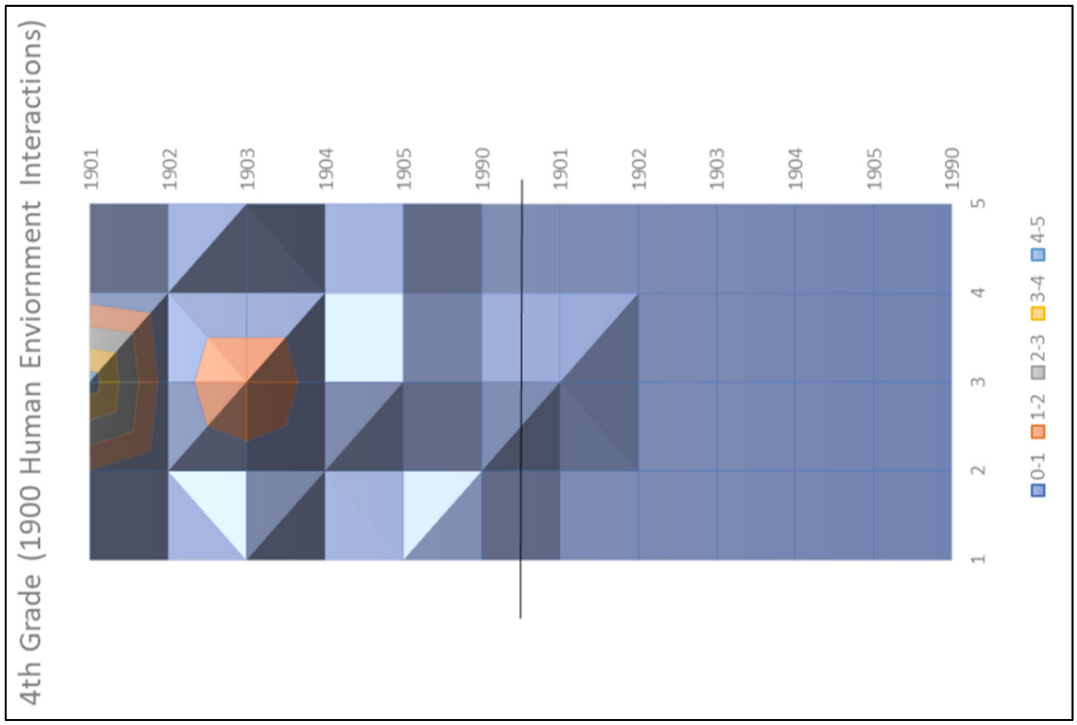


Figure 6.100. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

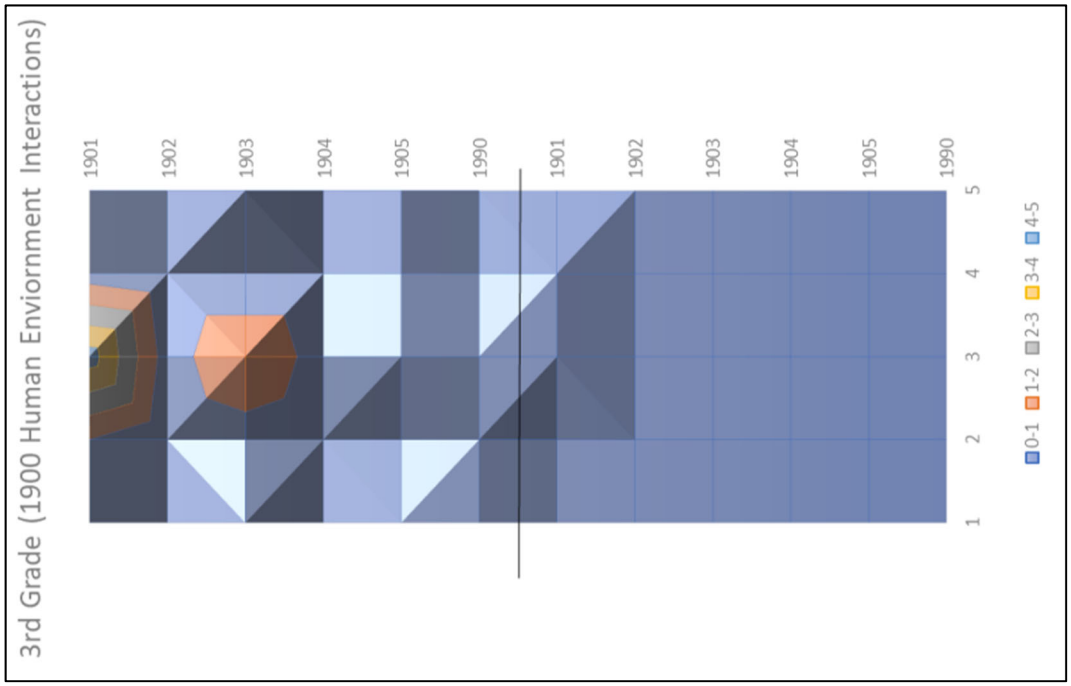


Figure 6.101. Geography Curriculum Correspondence between National Geography Standards and West Virginia (3rd grade) Social Studies Standards

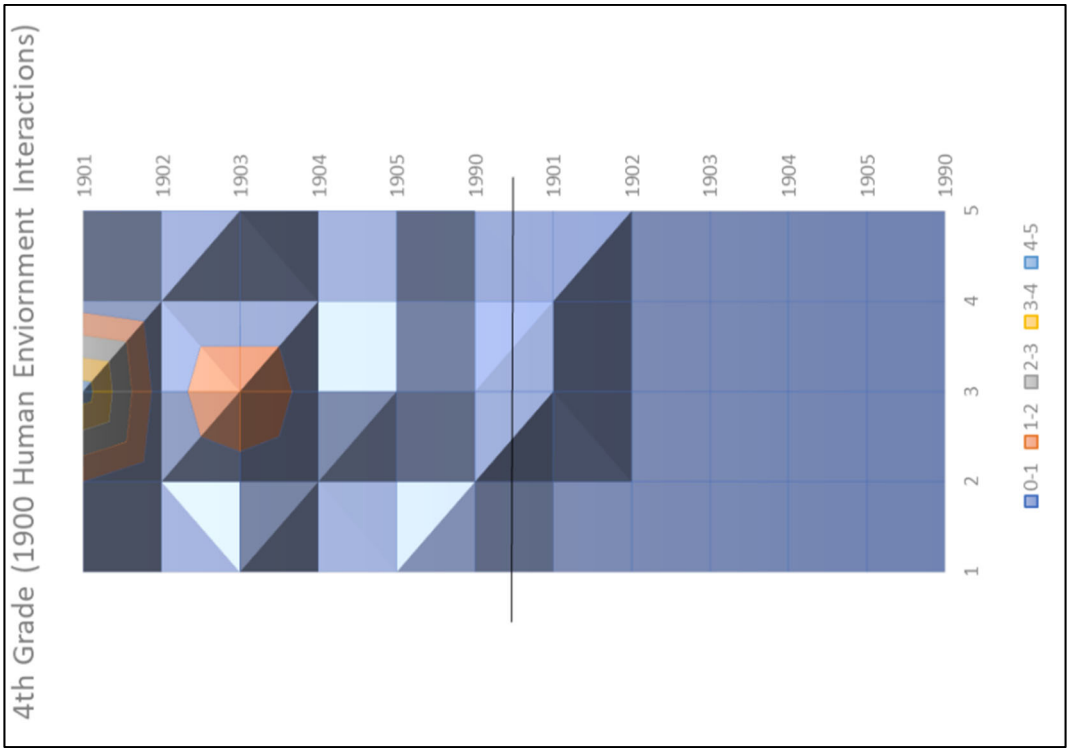


Figure 6.102. Geography Curriculum Correspondence between National Geography Standards and West Virginia (4th grade) Social Studies Standards

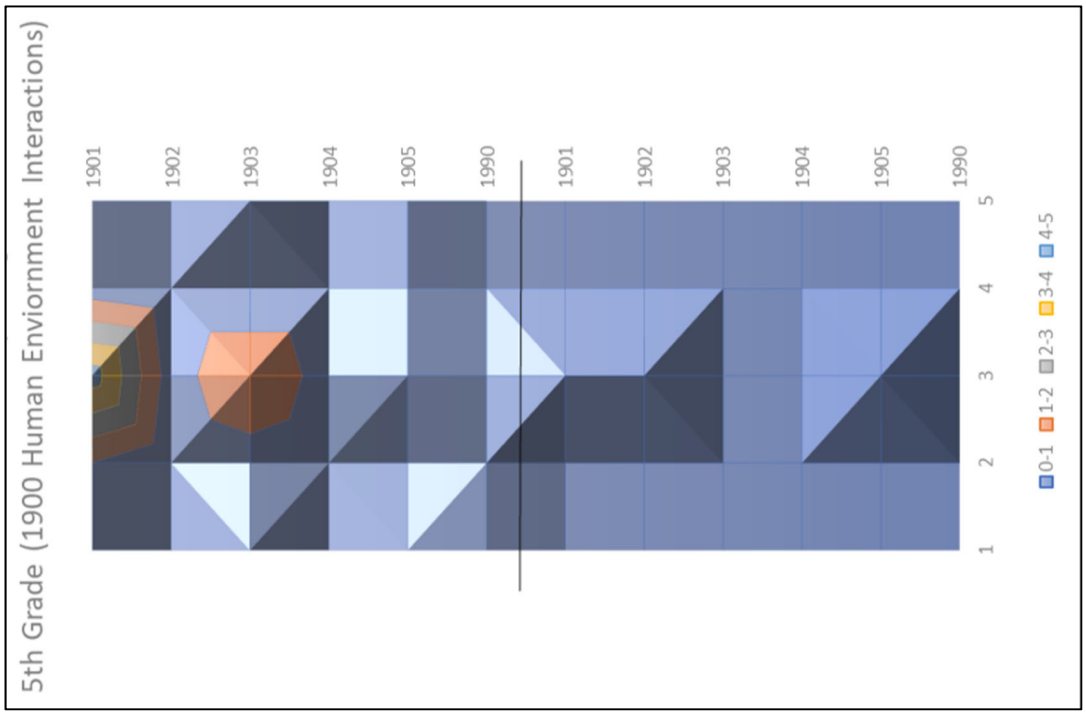


Figure 6.103. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 4 Inclusion of The Uses of Geography (2000)

States were less likely to incorporate standards that involved The Uses of Geography as written in *Geography for Life* (2012). The alignment index was low for this content area ranging from 0.0 (Kentucky) to 0.3529 (Missouri), with an average of 0.1421 (as seen in Table 6.9). The majority of the states were below 0.2, while six did not include the uses of geography in their state social studies standards. When states did include content from this area it usually referred to the spatial perspective (2001) and patterns of change (2007) (as seen in Figures 6.104 – 6.123).

Table 6.9. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 4 Benchmark for The Uses of Geography

State	2000 The Uses of Geography
Arkansas	0.1373
Connecticut	0.0588
Delaware	0.0784
Florida (3rd)	NA
Florida (4th)	NA
Georgia	NA
Idaho	0.1569
Illinois	0.1569
Indiana	0.2549
Iowa	0.0784
Kentucky	0.0000
Maryland	NA
Missouri	0.3529
Nevada	0.0686
New Jersey	0.1176
South Dakota	NA
Virginia	0.0980
West Virginia (3rd)	0.0980
West Virginia (4th)	0.3333
Wyoming (5th)	NA
Average	*0.1421*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

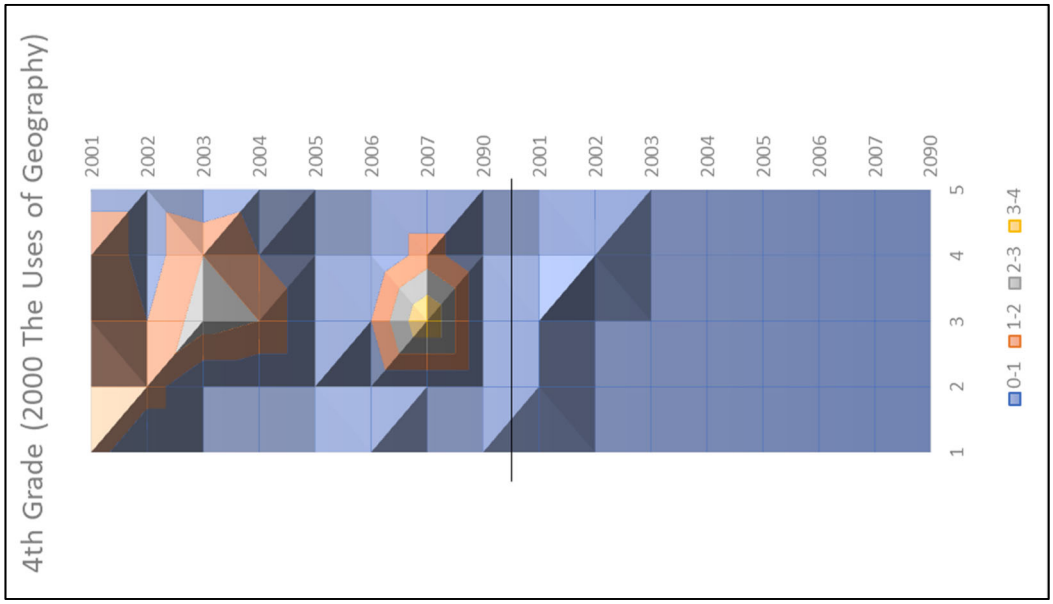


Figure 6.104. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

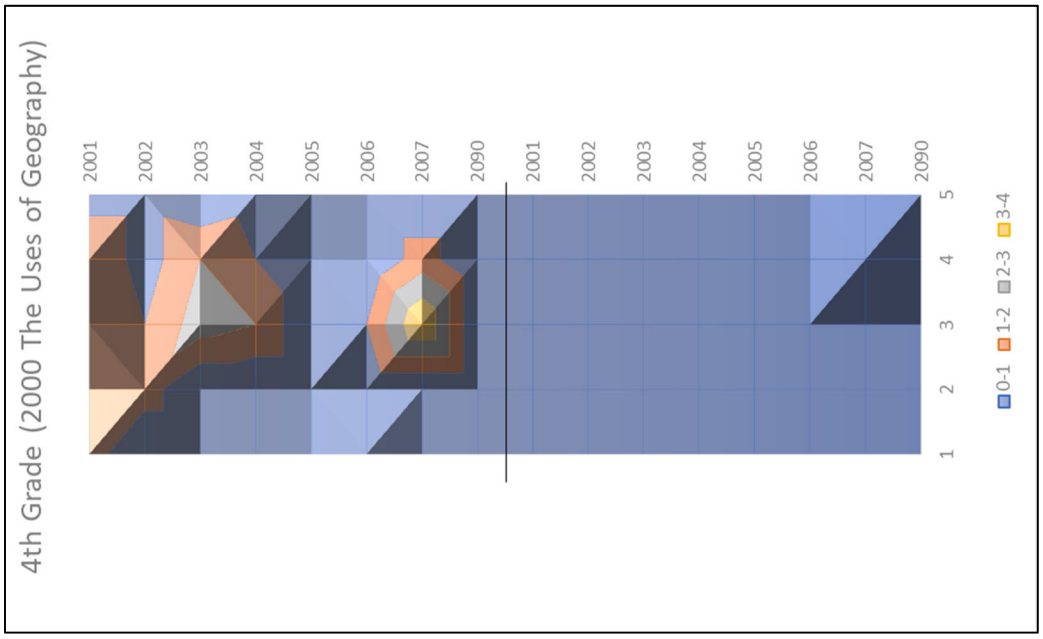


Figure 6.105. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

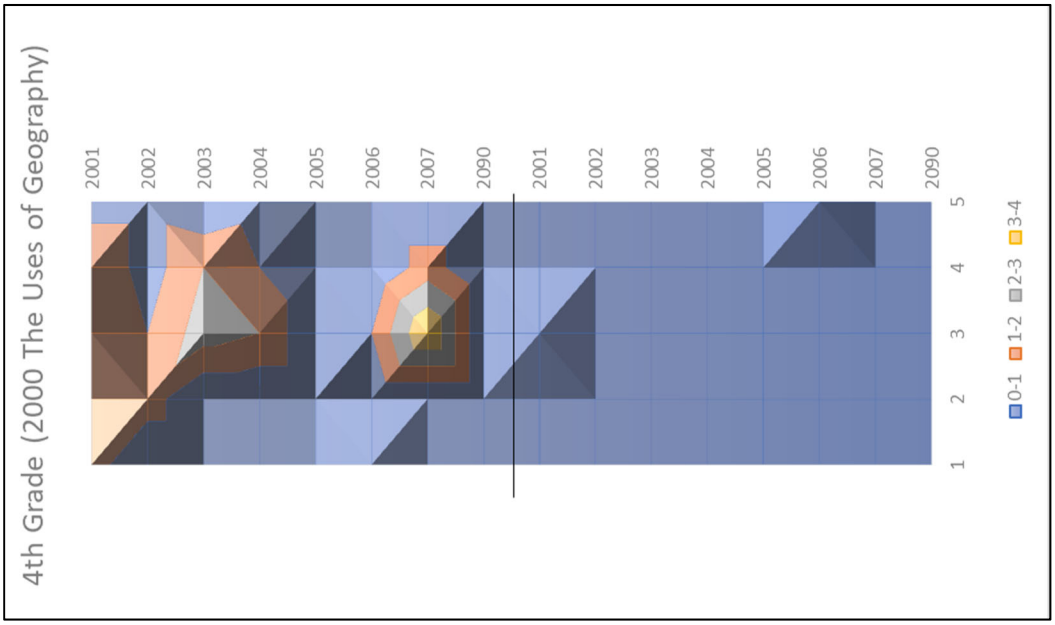


Figure 6.106. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

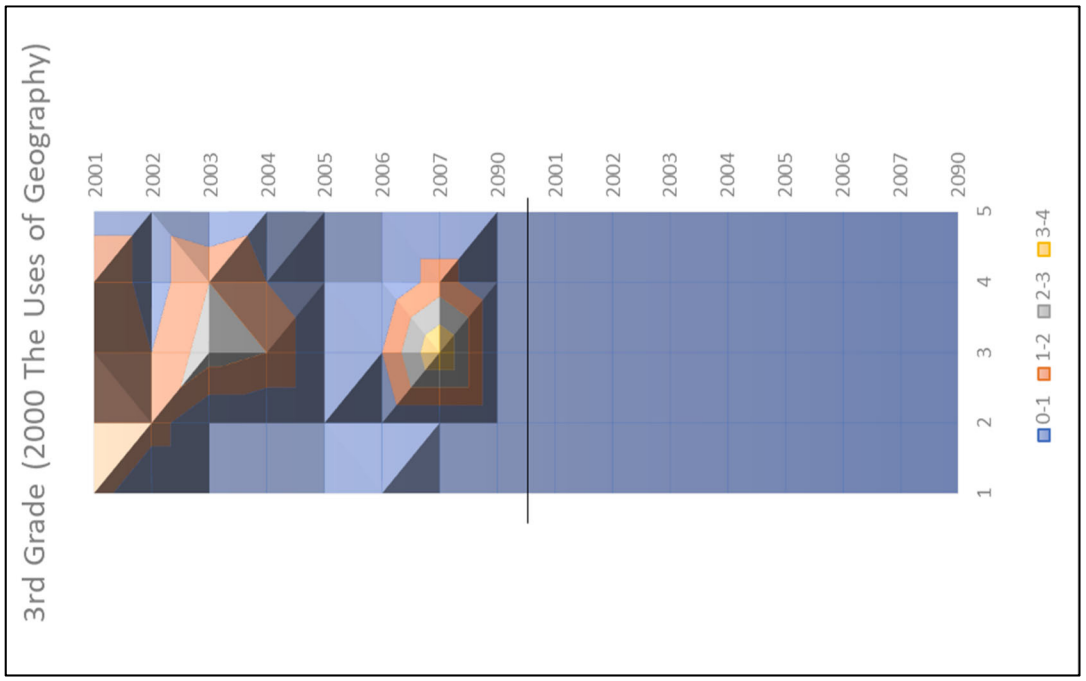


Figure 6.107. Geography Curriculum Correspondence between National Geography Standards and Florida (3rd grade) Social Studies Standards

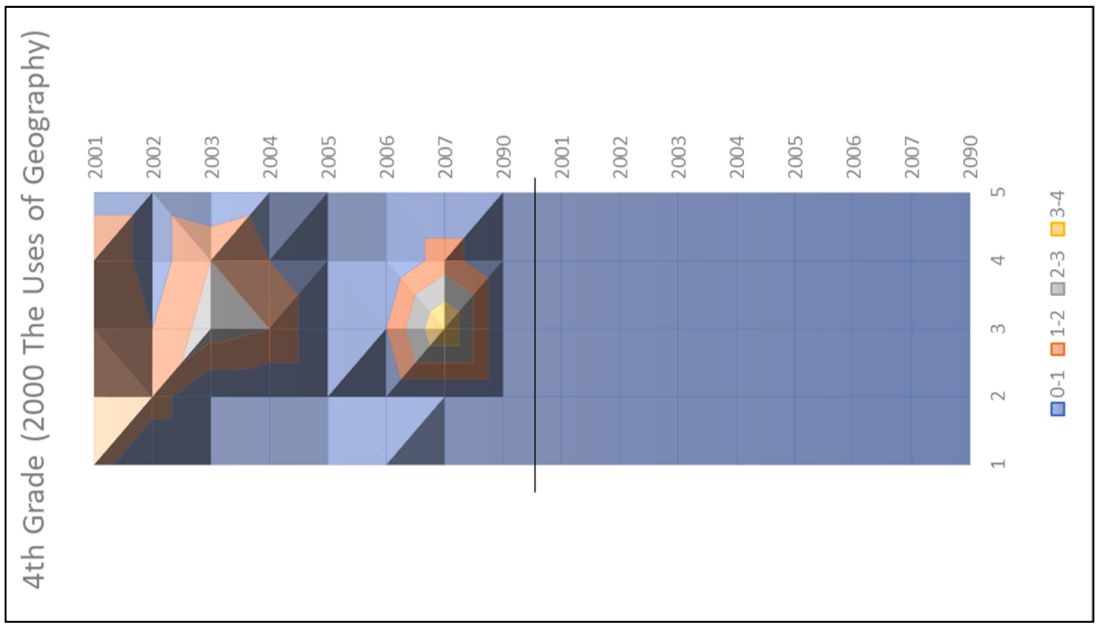


Figure 6.108. Geography Curriculum Correspondence between National Geography Standards and Florida (4th grade) Social Studies Standards

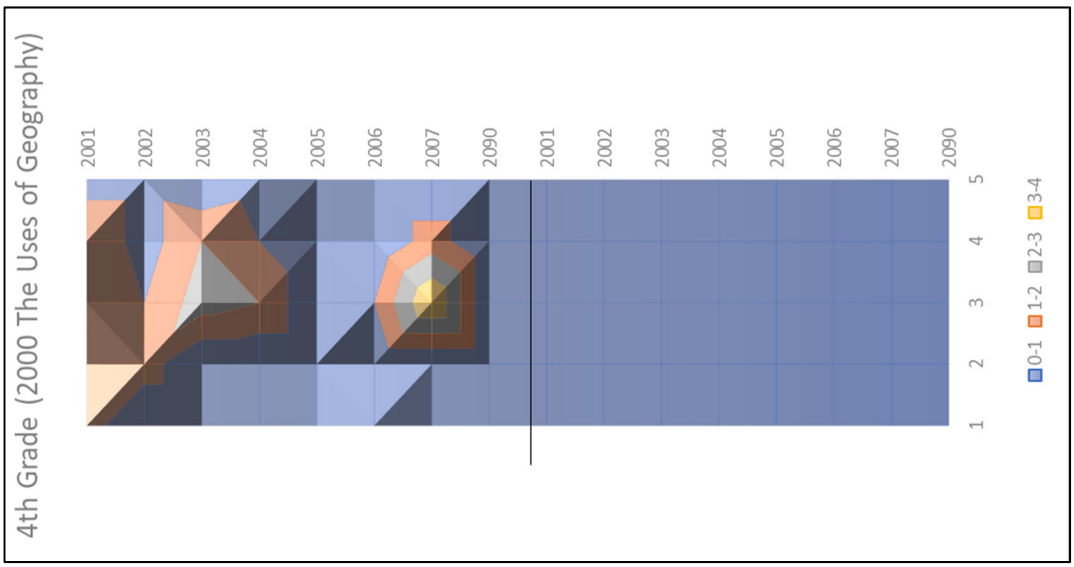


Figure 6.109. Geography Curriculum Correspondence between National Geography Standards and Georgia Social Studies Standards

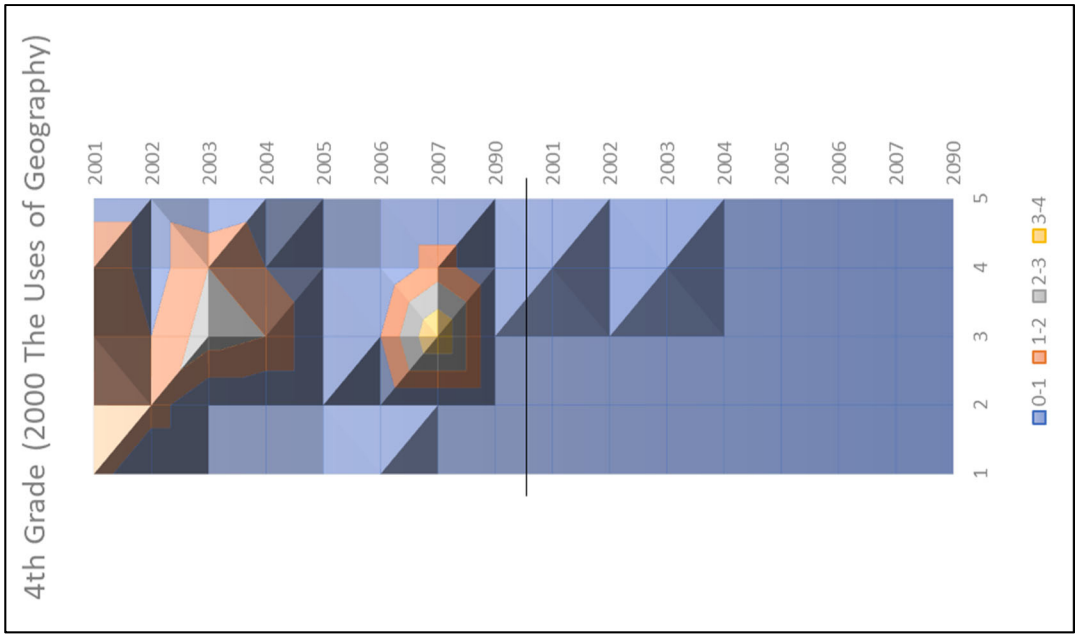


Figure 6.110. Geography Curriculum Correspondence between National Geography Standards and Idaho Social Studies Standards

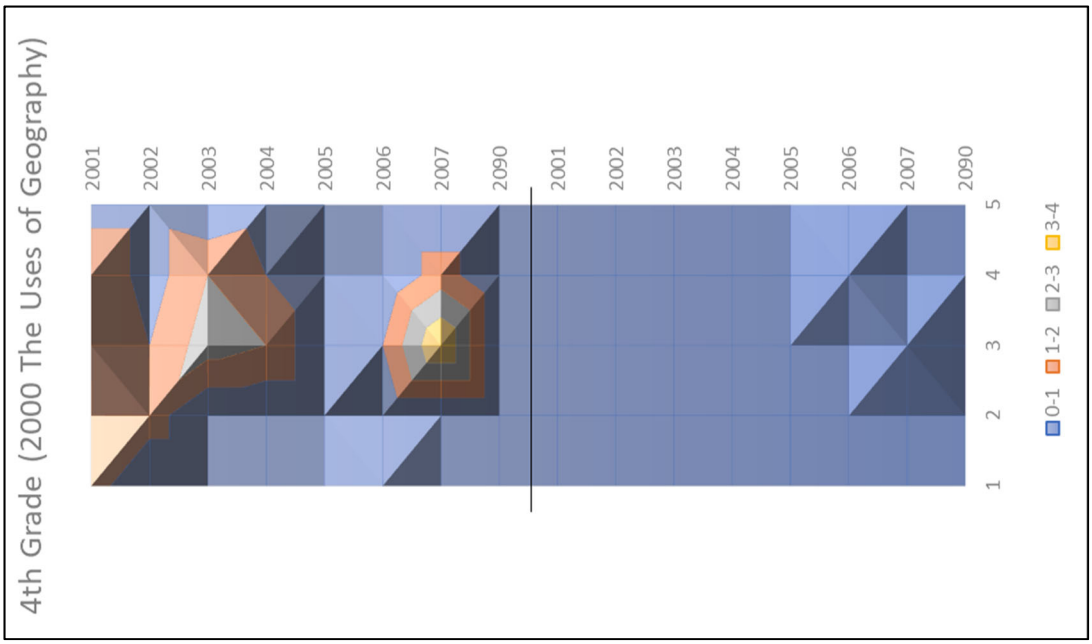


Figure 6.111. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

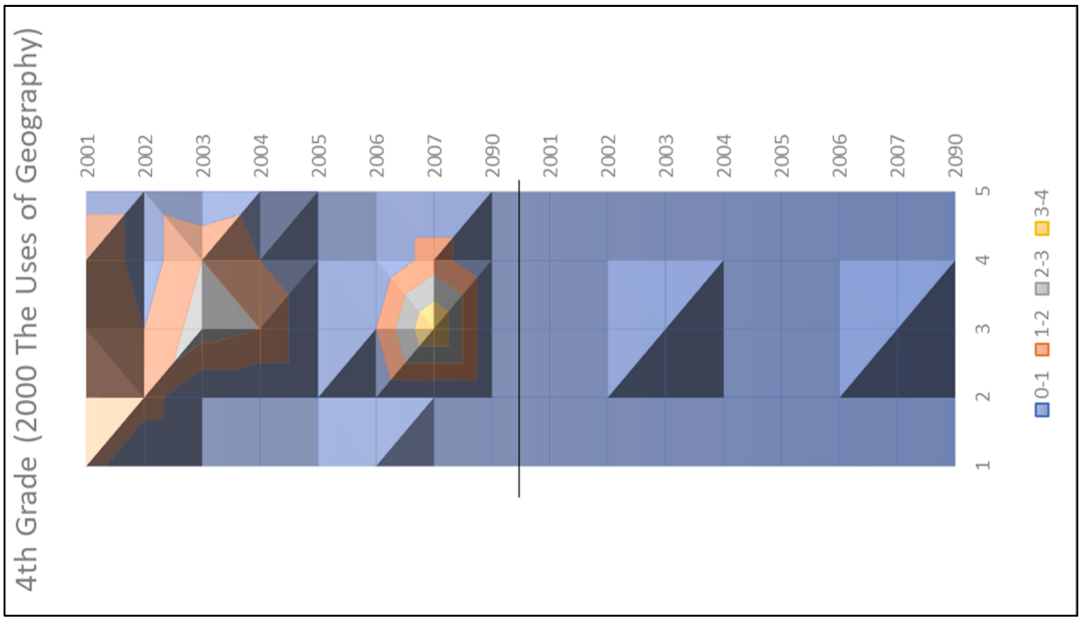


Figure 6.112. Geography Curriculum Correspondence between National Geography Standards and Indiana Social Studies Standards

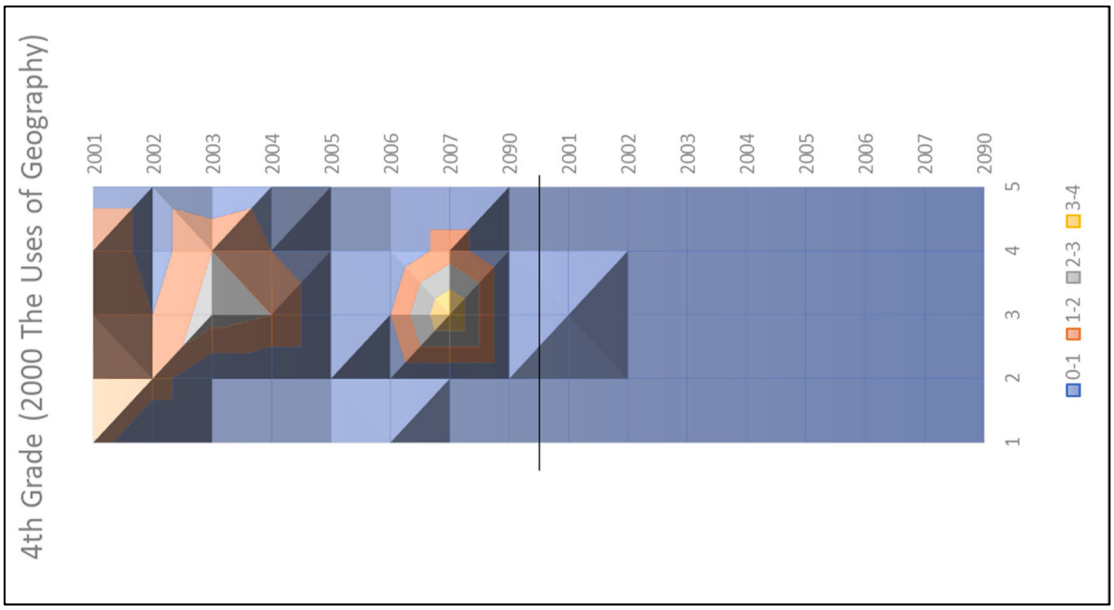


Figure 6.113. Geography Curriculum Correspondence between National Geography Standards and Iowa Social Studies Standards

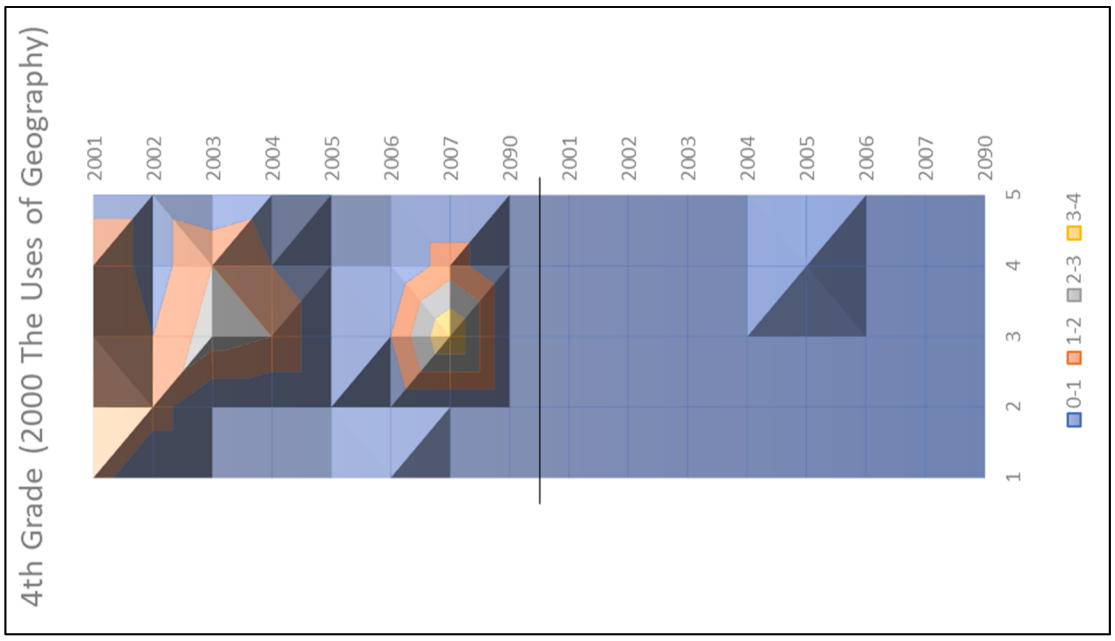


Figure 6.114. Geography Curriculum Correspondence between National Geography Standards and Kentucky Social Studies Standards

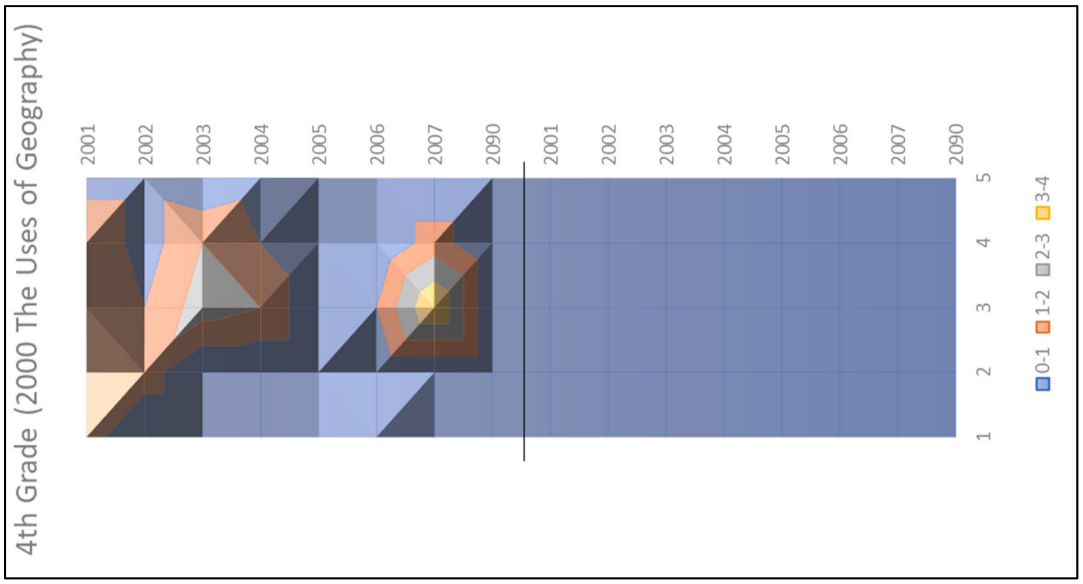


Figure 6.115. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

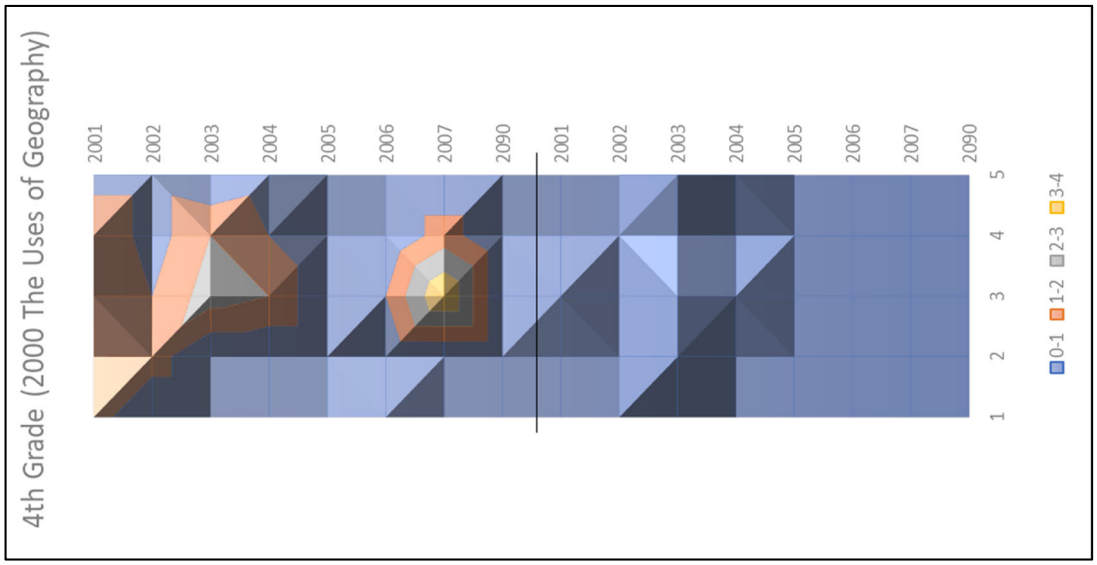


Figure 6.116. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

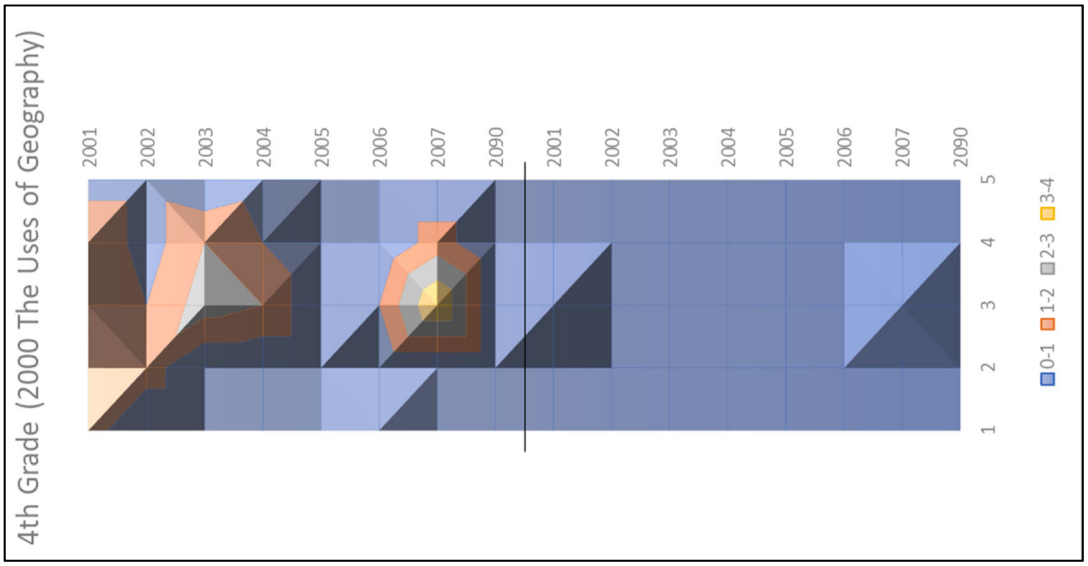


Figure 6.117. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

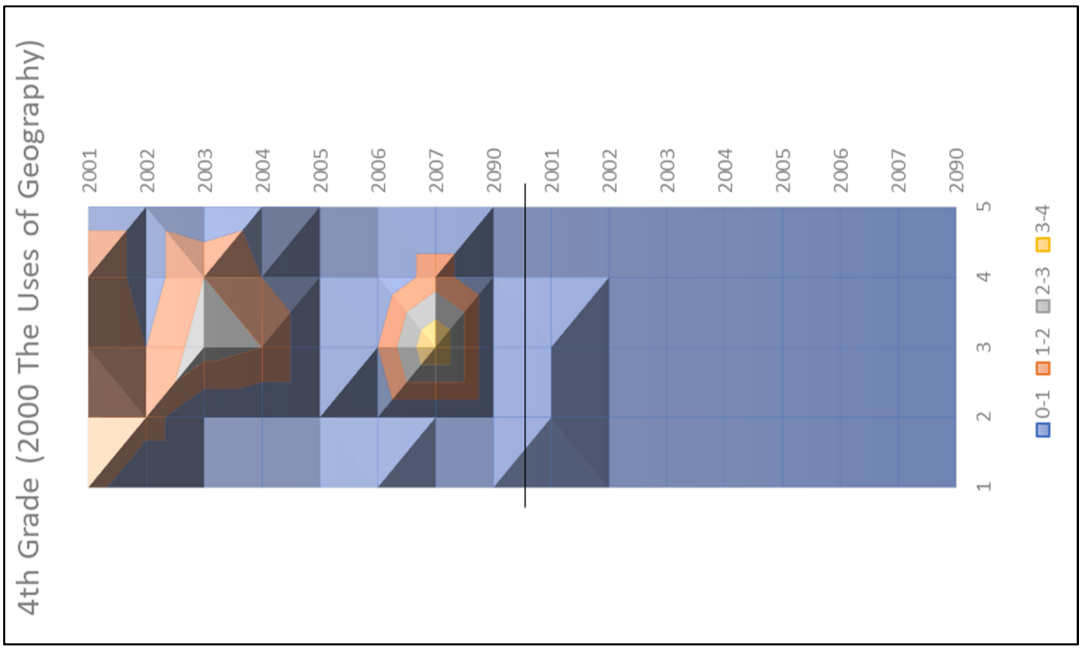


Figure 6.118. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

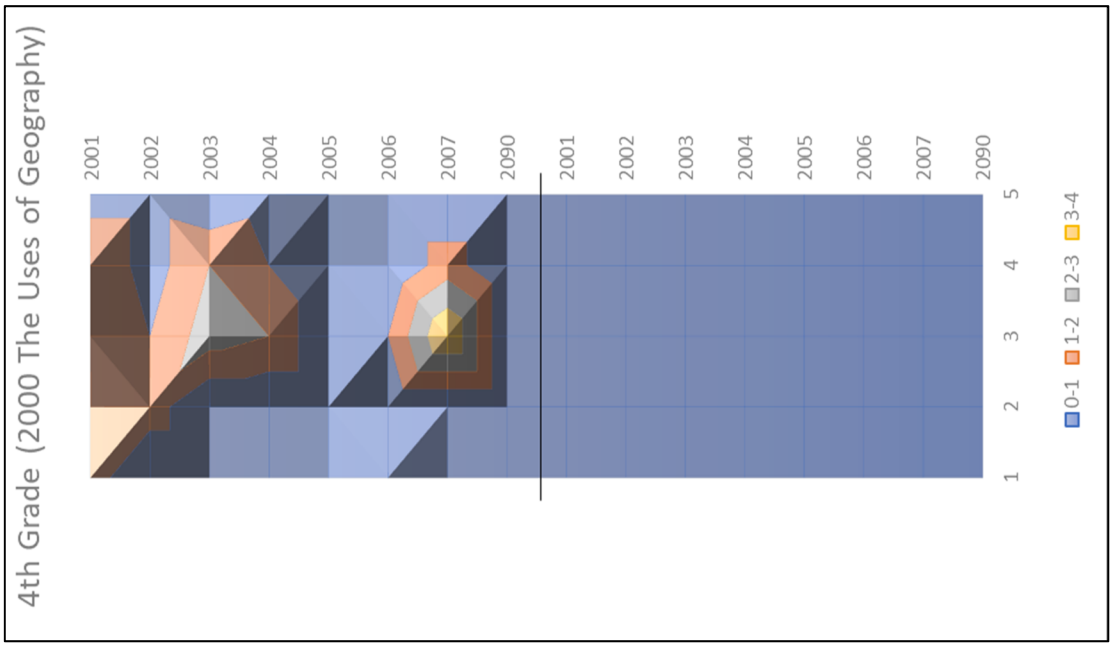


Figure 6.119. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

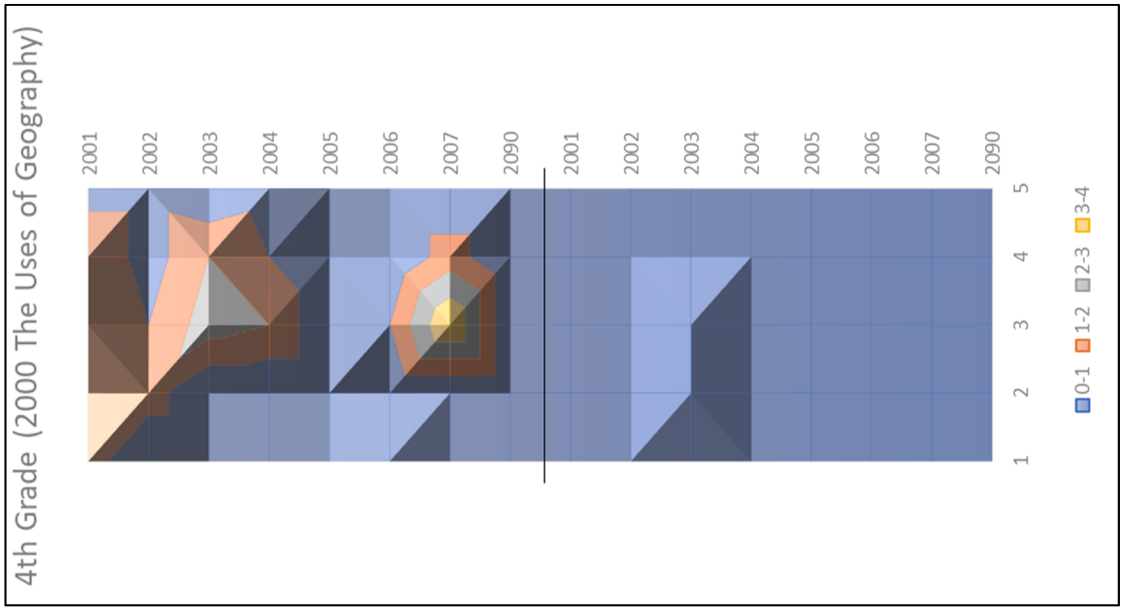


Figure 6.120. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

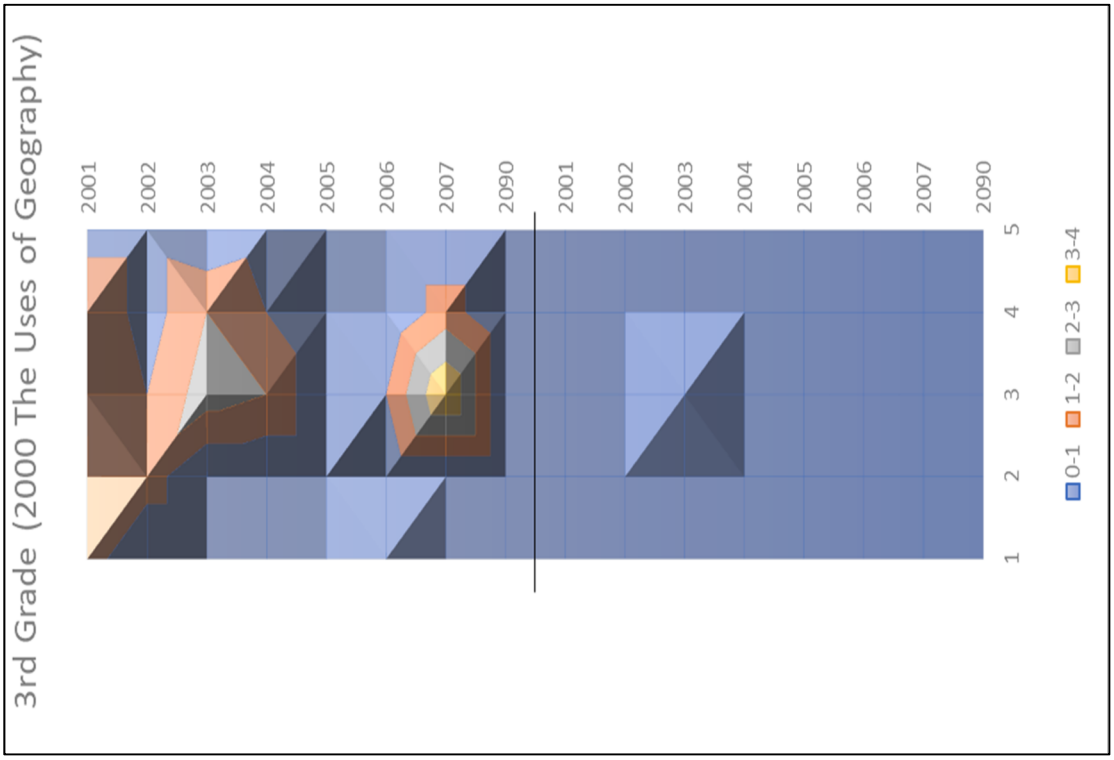


Figure 6.121. Geography Curriculum Correspondence between National Geography Standards and West Virginia (3rd grade) Social Studies Standards

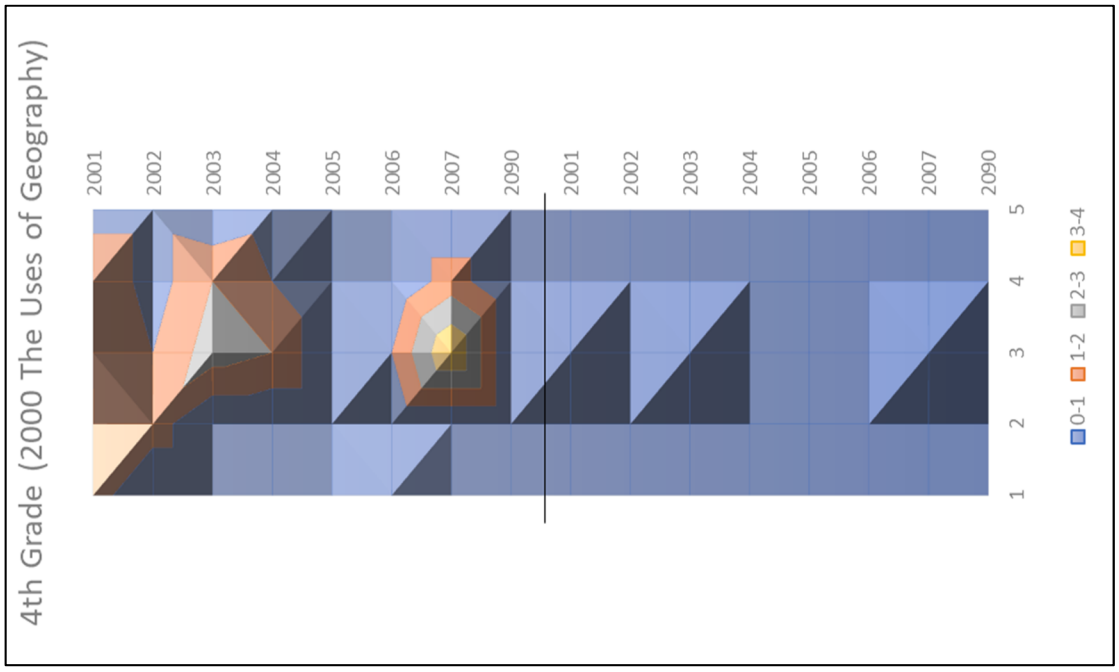


Figure 6.122. Geography Curriculum Correspondence between National Geography Standards and West Virginia (4th grade) Social Studies Standards

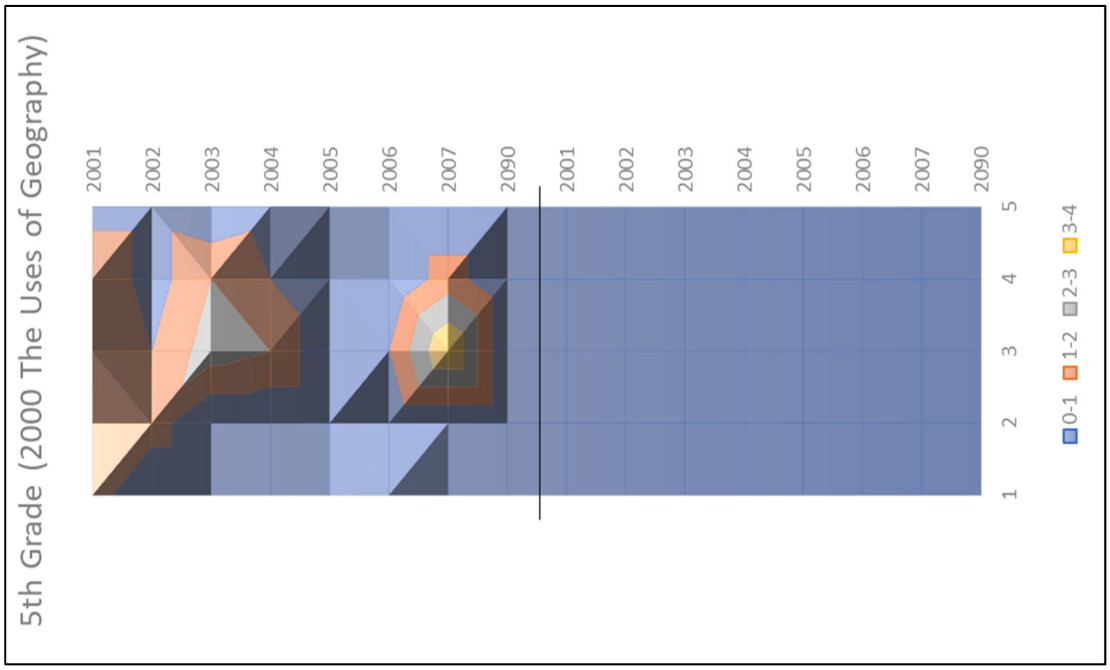


Figure 6.123. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 8 Inclusion of Map Skills (1500)

States inclusion of map skills at grade 8 ranged from an alignment index of 0.0238 (Florida 8th grade) – 0.4571 (South Dakota 7th grade) as seen in Table 6.10. Utah did not include map skills in the seventh grade Utah Studies course, nor did Iowa in grade 7. However, map skills were dominantly taught at grade 6 in Iowa with an alignment index of 0.3036. Looking at the content maps (Figure 6.124 – 6.152), there is range of variation between the content breadth covered by states that align with the national geography standards. Across all states that included standards on map skills included being able to locate features on the earth (1507). Some states begin to mention geospatial technologies (1511) in their standards, but not nearly to the emphasis *Geography for Life* (2012) idealizes.

Table 6.10. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 8 Benchmark for Map Skills

State	1500 Map Skills
Arkansas (7th)	0.3393
Connecticut (6 & 7)	0.3393
Delaware (6-8)	0.1250
Florida (6th)	0.1964
Florida (7th)	0.1071
Florida (8th)	0.0238
Georgia (6th)	0.1840
Georgia (7th)	0.2115
Georgia (8th)	0.0357
Idaho (6-9 west)	0.2321
Idaho (6-9 east)	0.2321
Illinois (6-8)	0.2679
Indiana (6th)	0.0357
Indiana (7th)	0.0893
Indiana (8th)	0.2679
Iowa (6th)	0.3036
Iowa (7th)	NA
Iowa (8th)	0.0714
Kentucky (6th)	0.1786
Kentucky (8th)	0.1250
Maryland (8th)	0.2321
Missouri (6-8)	0.0536
Nevada (6-8)	0.0714
New Jersey (8th)	0.1429
South Dakota (7th)	0.4571
Utah (7th)	NA
Virginia (World Geo)	0.0893
West Virginia (8th)	0.3417
Wyoming (8th)	0.1607
Average	*0.1820*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

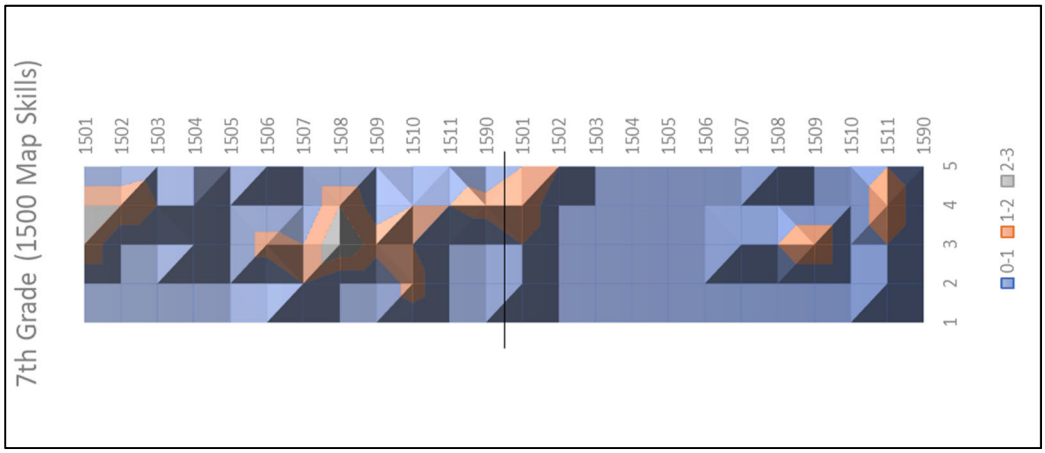


Figure 6.124. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

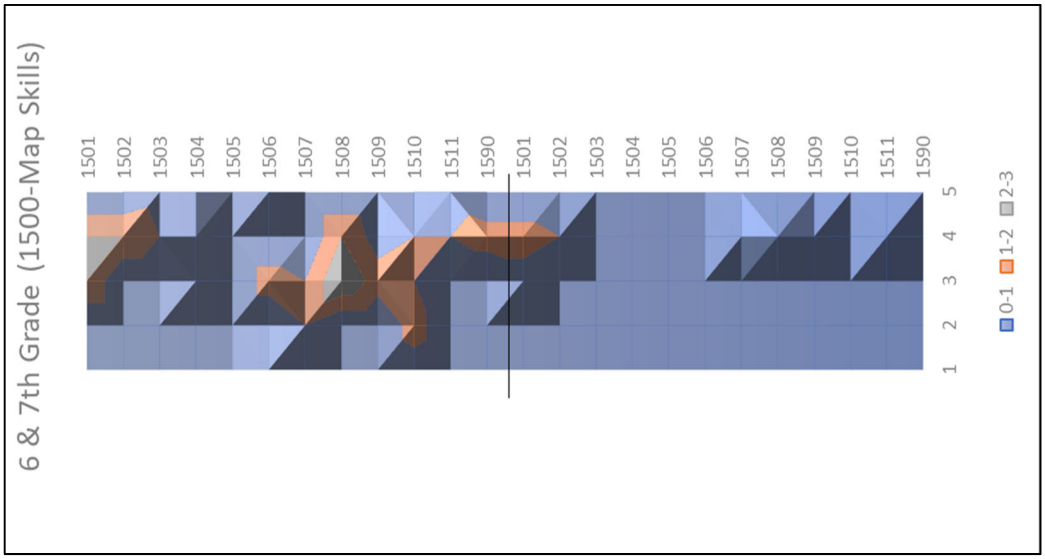


Figure 6.125. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

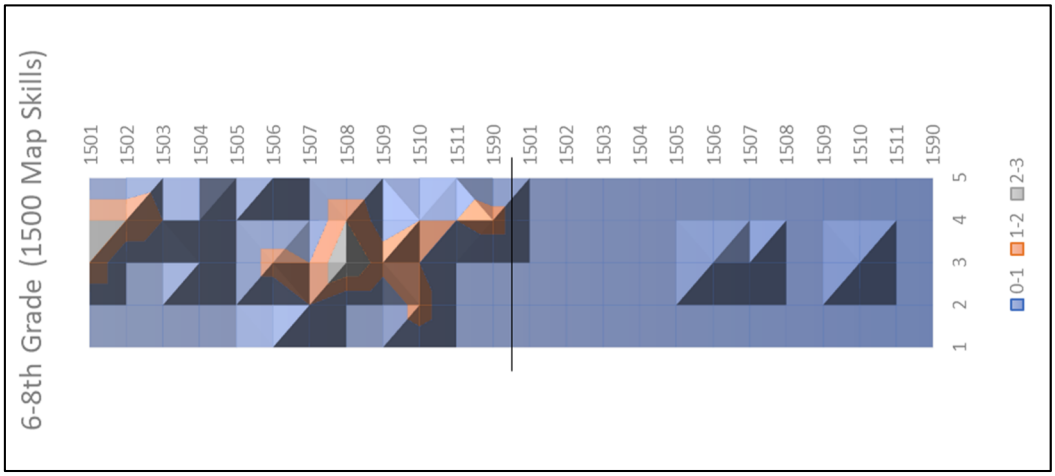


Figure 6.126. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

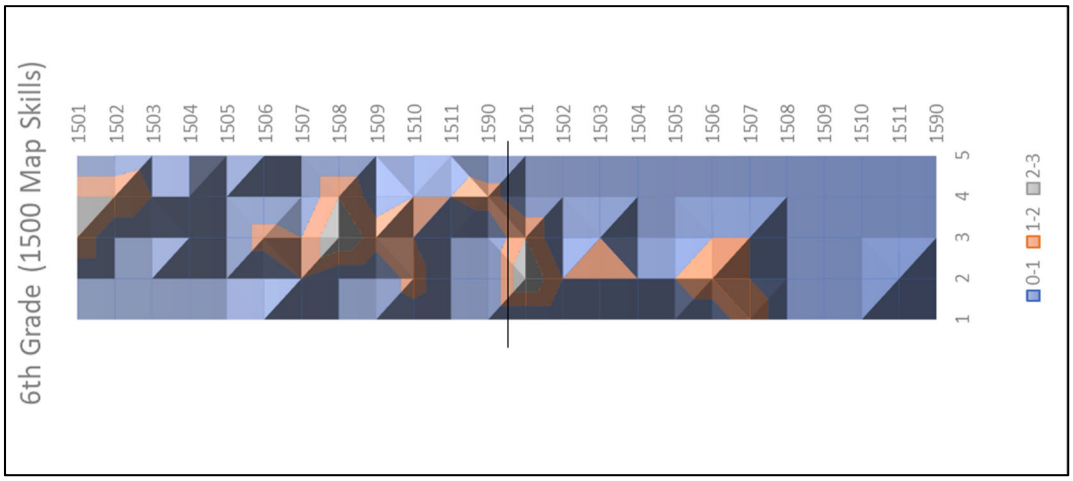


Figure 6.127. Geography Curriculum Correspondence between National Geography Standards and Florida (6th grade) Social Studies Standards

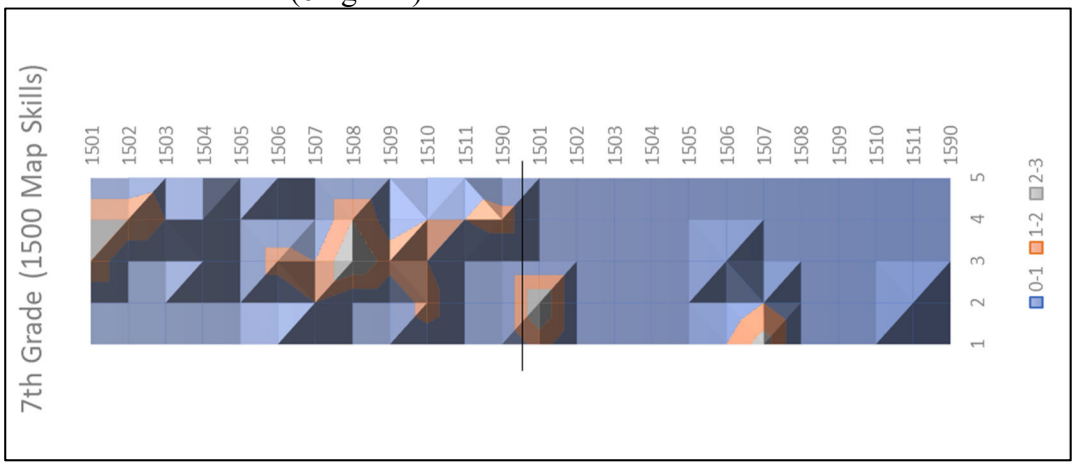


Figure 6.128. Geography Curriculum Correspondence between National Geography Standards and Florida (7th grade) Social Studies Standards

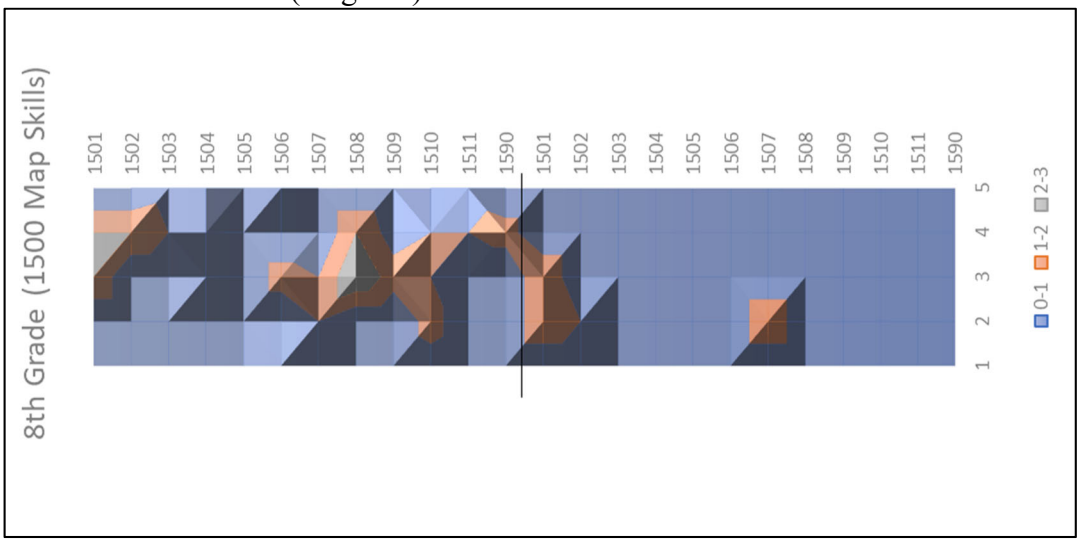


Figure 6.129. Geography Curriculum Correspondence between National Geography Standards and Florida (8th grade) Social Studies Standards

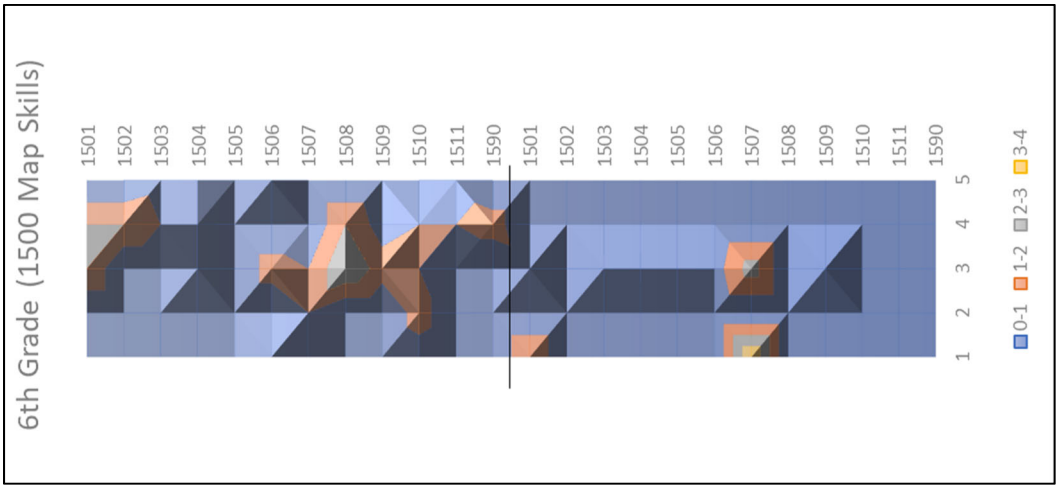


Figure 6.130. Geography Curriculum Correspondence between National Geography Standards and Georgia (6th grade) Social Studies Standards

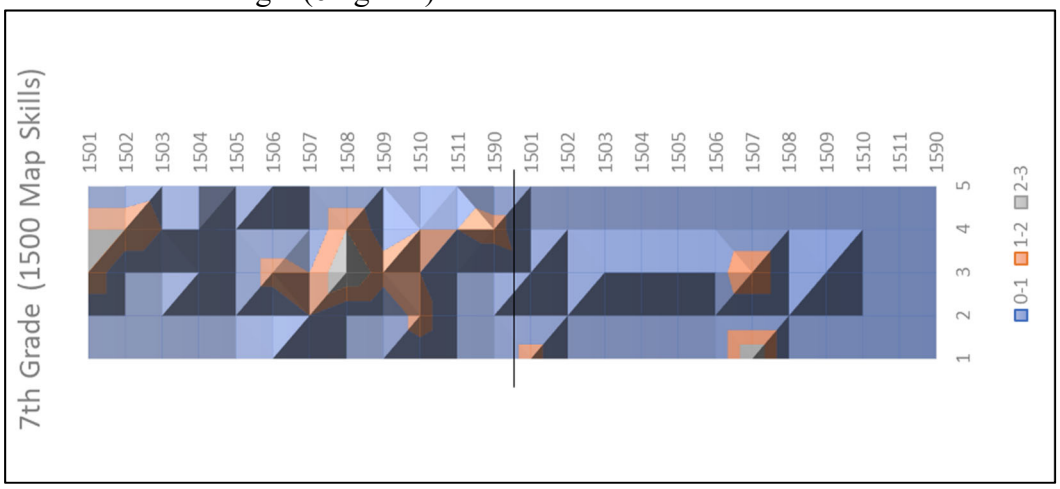


Figure 6.131. Geography Curriculum Correspondence between National Geography Standards and Georgia (7th grade) Social Studies Standards

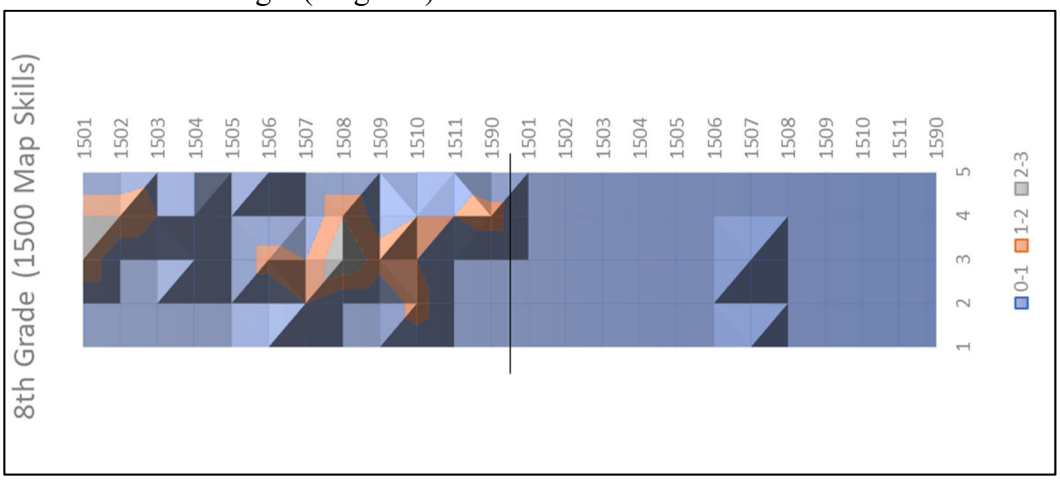


Figure 6.132. Geography Curriculum Correspondence between National Geography Standards and Georgia (8th grade) Social Studies Standards

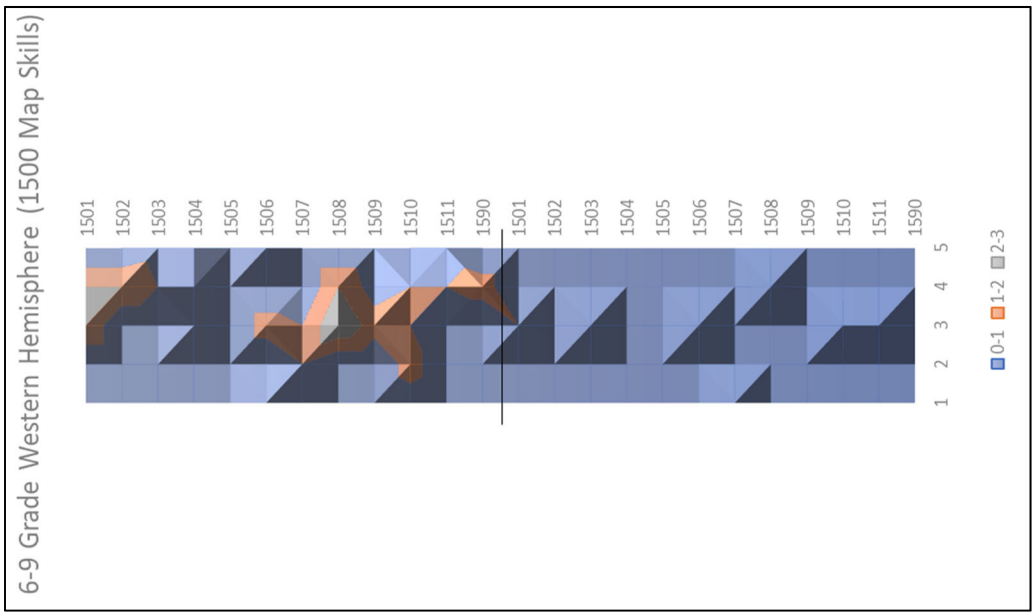


Figure 6.133. Geography Curriculum Correspondence between National Geography Standards and Idaho (western) Social Studies Standards

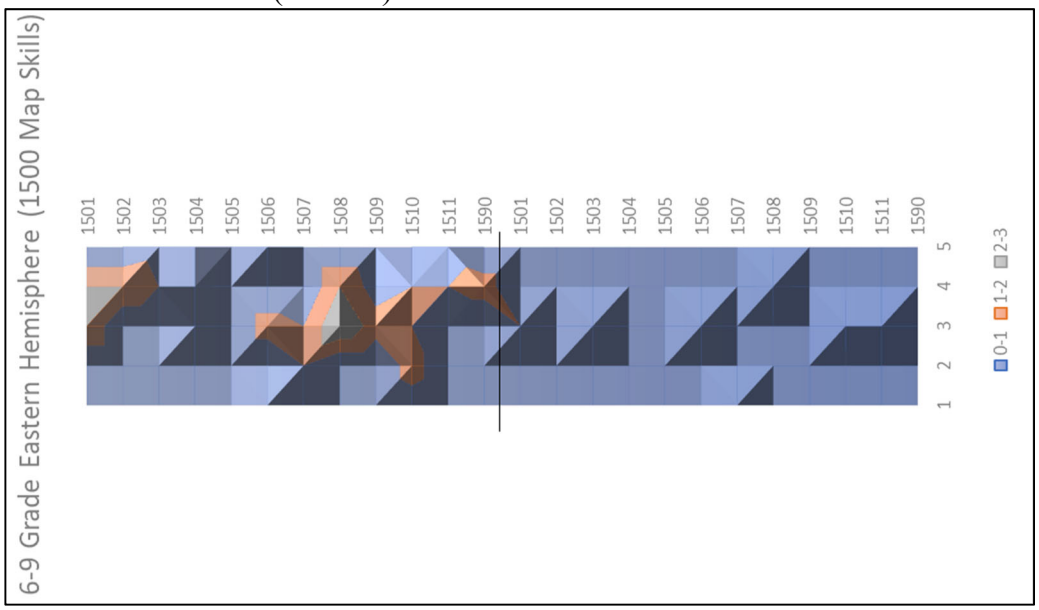


Figure 6.134. Geography Curriculum Correspondence between National Geography Standards and Idaho (eastern) Social Studies Standards

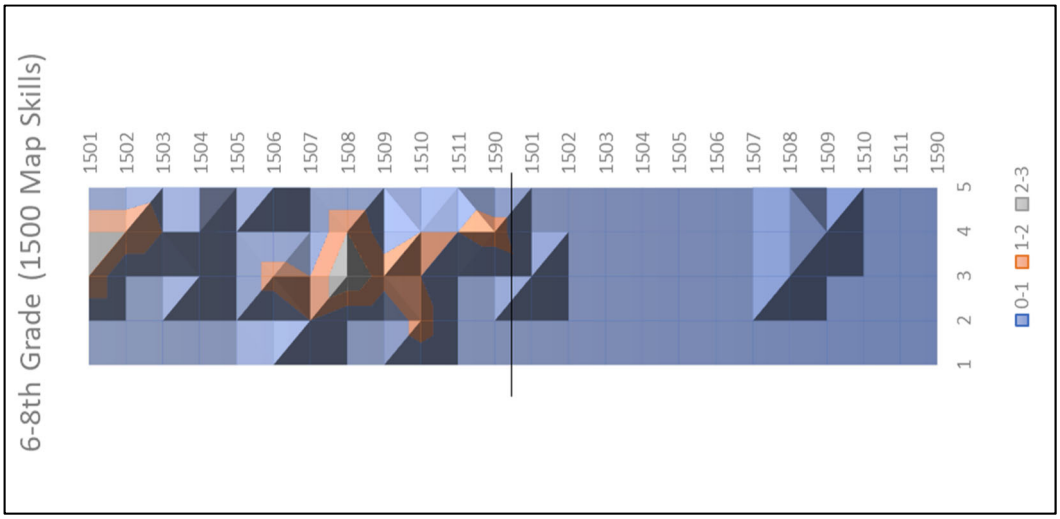


Figure 6.135. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

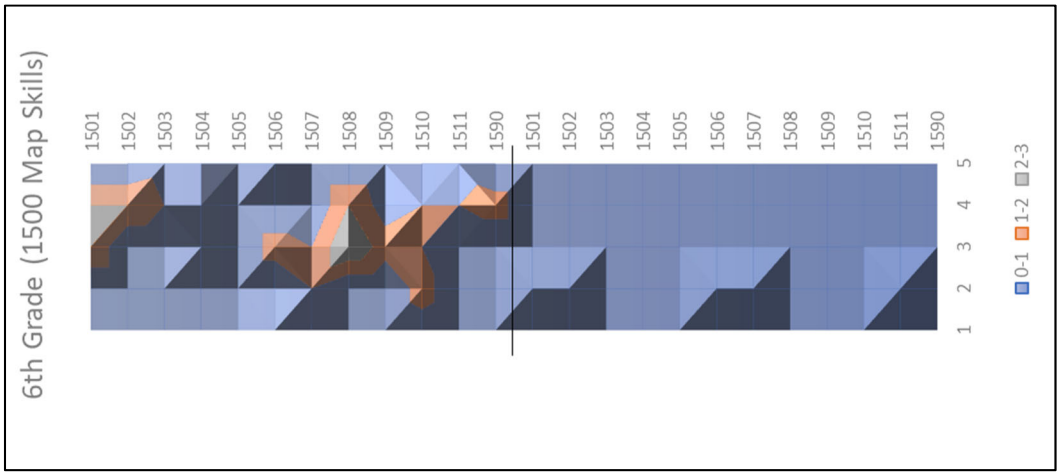


Figure 6.136. Geography Curriculum Correspondence between National Geography Standards and Indiana (6th grade) Social Studies Standards

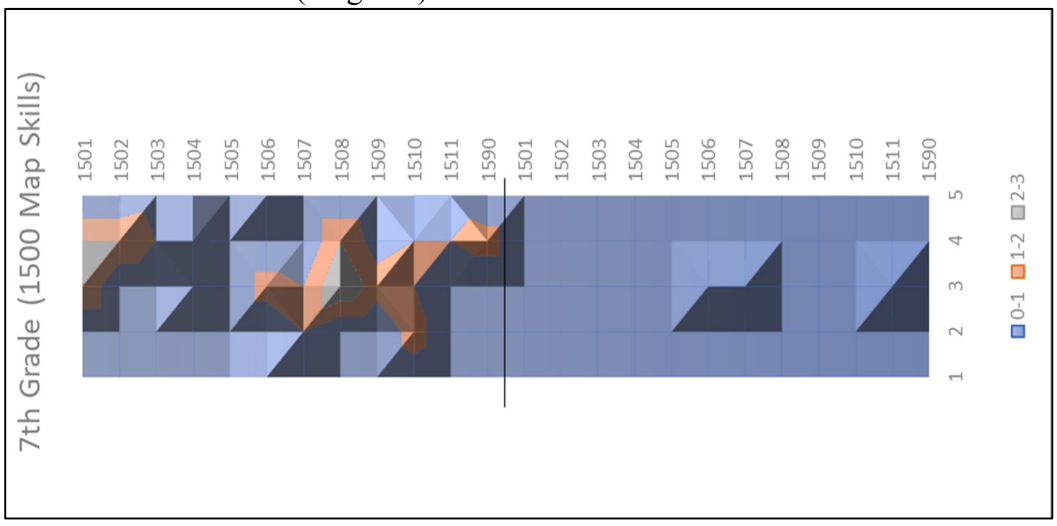


Figure 6.137. Geography Curriculum Correspondence between National Geography Standards and Indiana (7th grade) Social Studies Standards

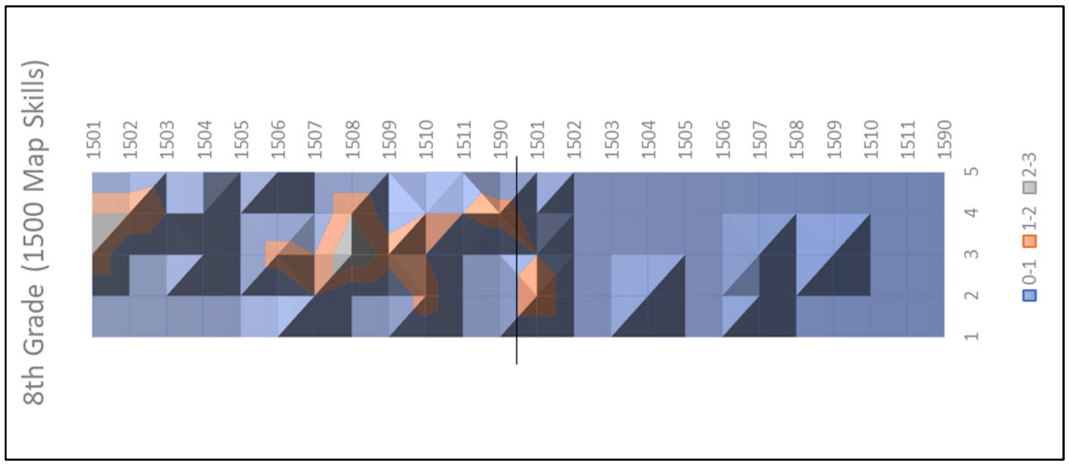


Figure 6.138. Geography Curriculum Correspondence between National Geography Standards and Indiana (8th grade) Social Studies Standards

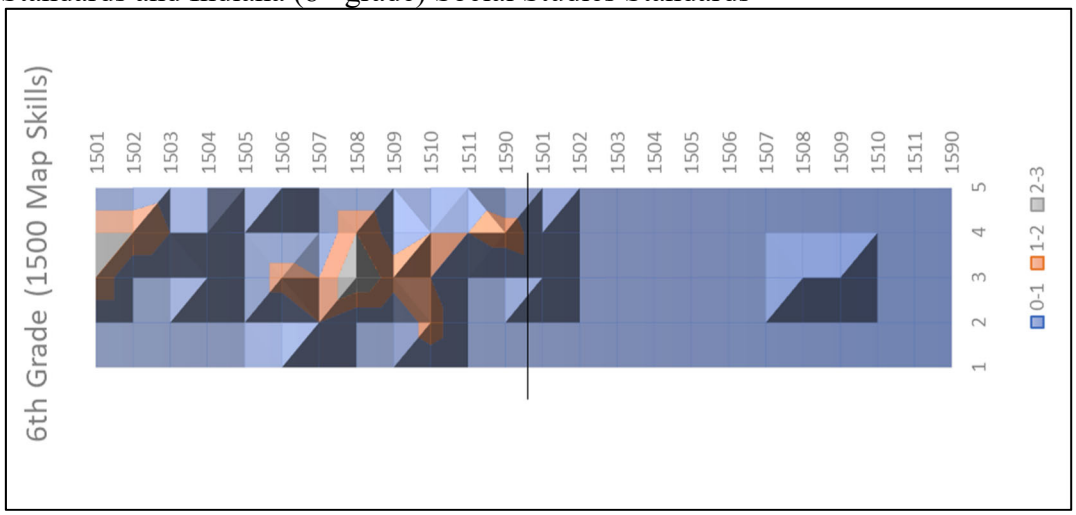


Figure 6.139. Geography Curriculum Correspondence between National Geography Standards and Iowa (6th grade) Social Studies Standards

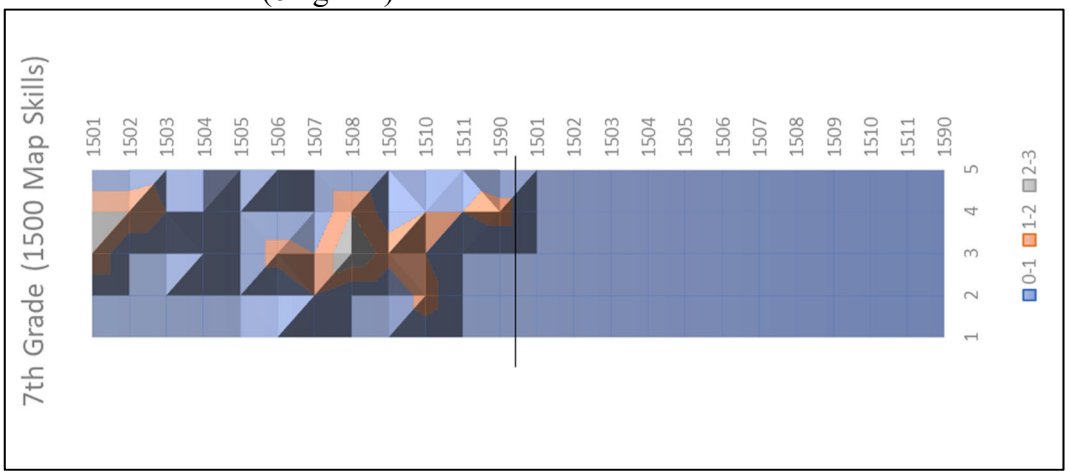


Figure 6.140. Geography Curriculum Correspondence between National Geography Standards and Iowa (7th grade) Social Studies Standards

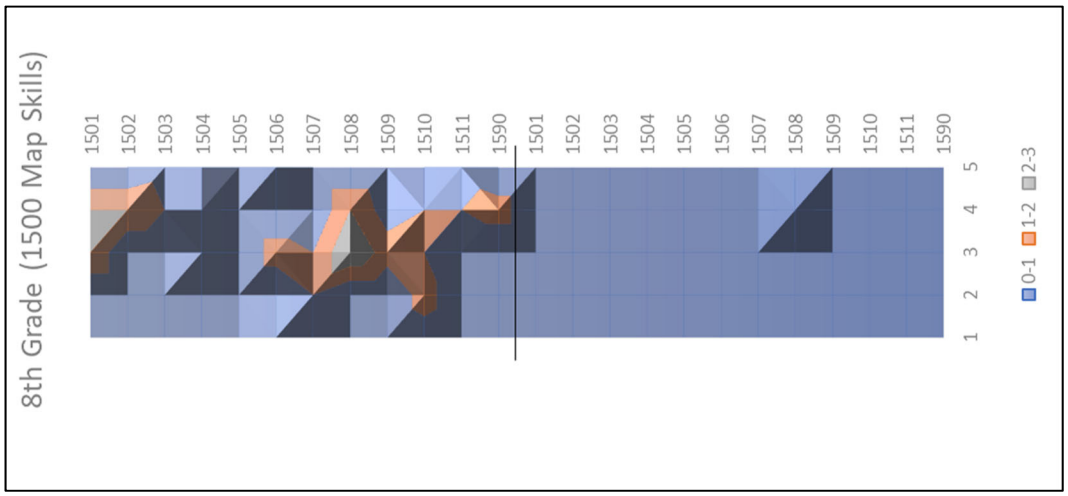


Figure 6.141. Geography Curriculum Correspondence between National Geography Standards and Iowa (8th grade) Social Studies Standards

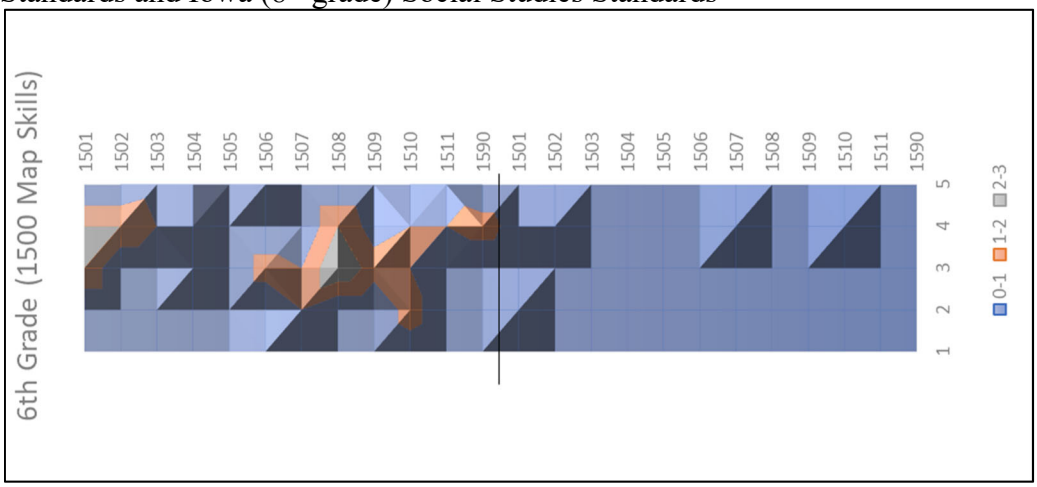


Figure 6.142. Geography Curriculum Correspondence between National Geography Standards and Kentucky (6th grade) Social Studies Standards

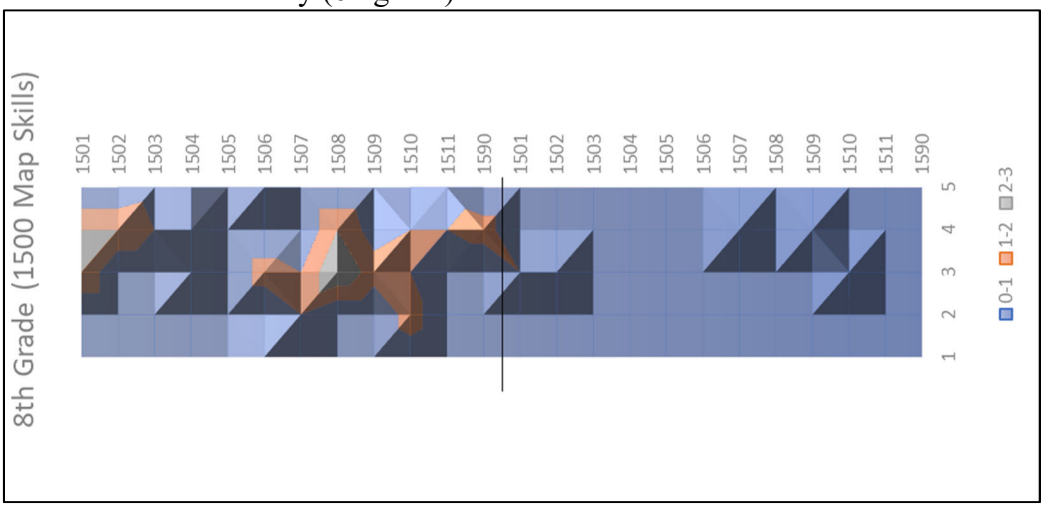


Figure 6.143. Geography Curriculum Correspondence between National Geography Standards and Kentucky (8th grade) Social Studies Standards

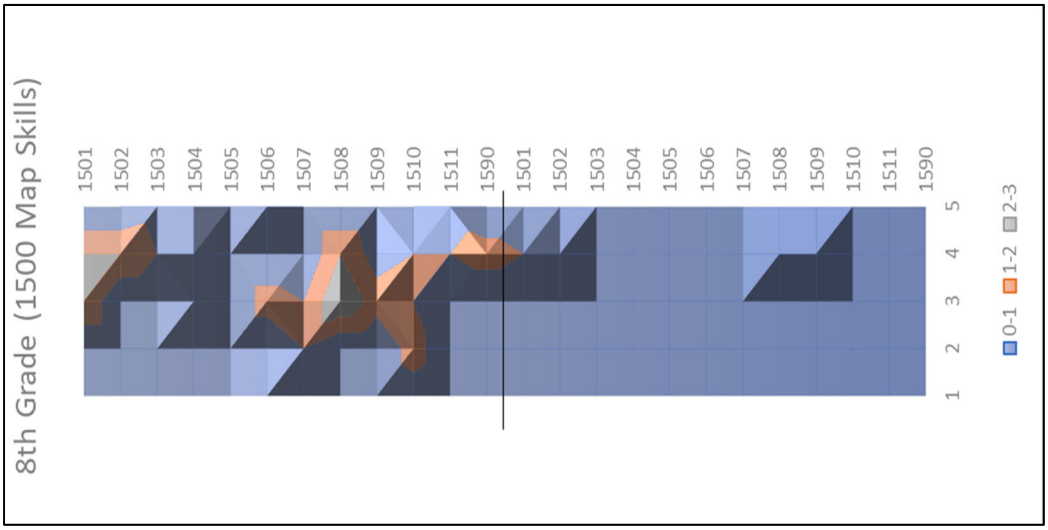


Figure 6.144. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

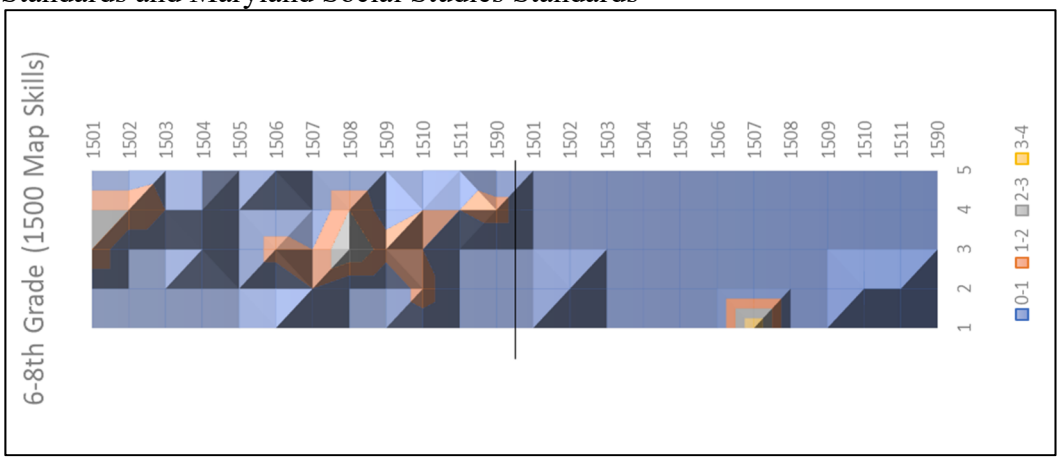


Figure 6.145. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

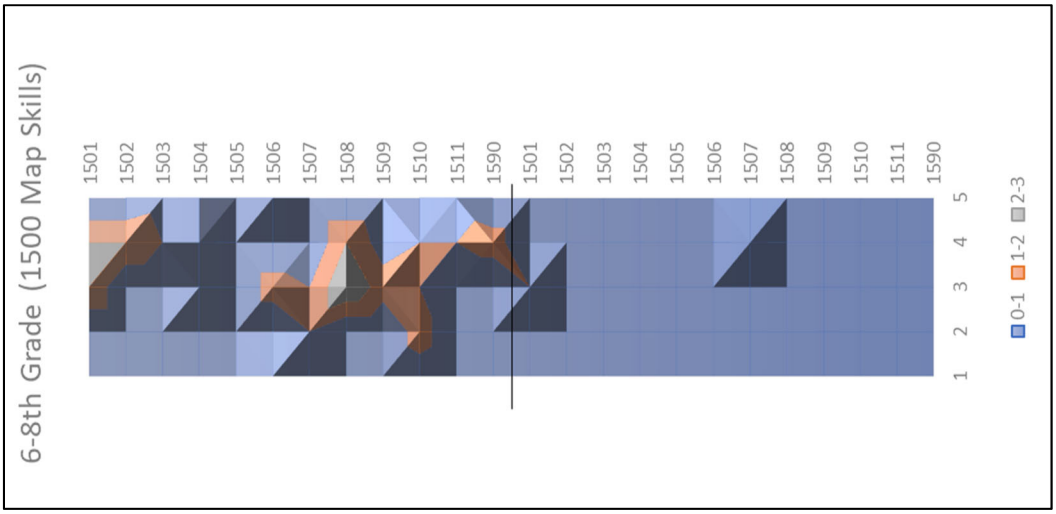


Figure 6.146. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

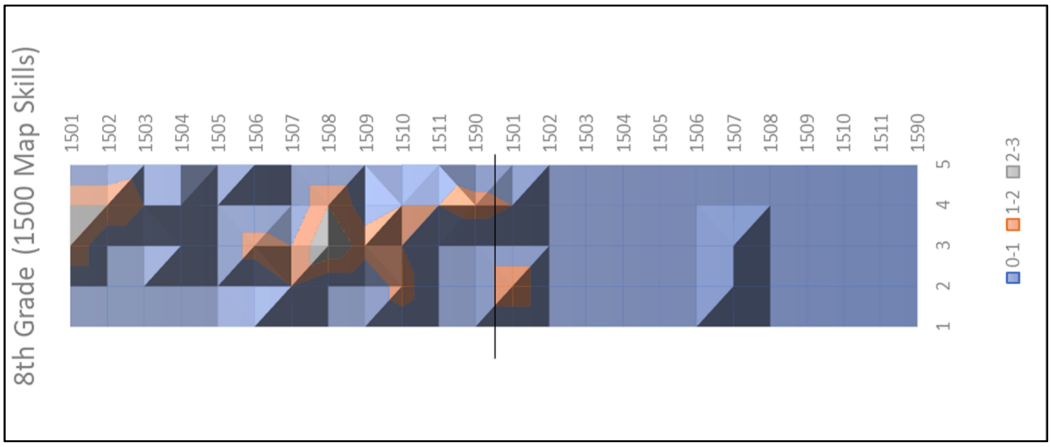


Figure 6.147. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

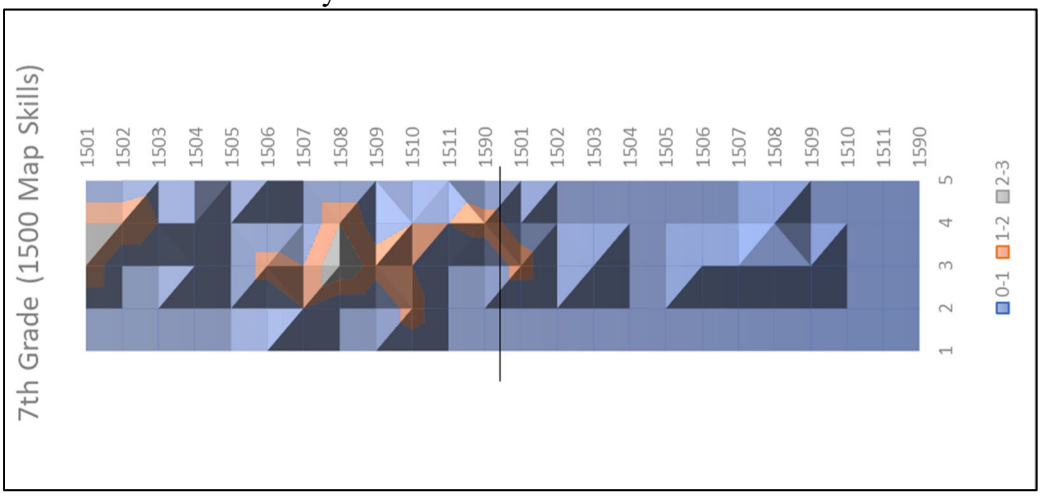


Figure 6.148. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

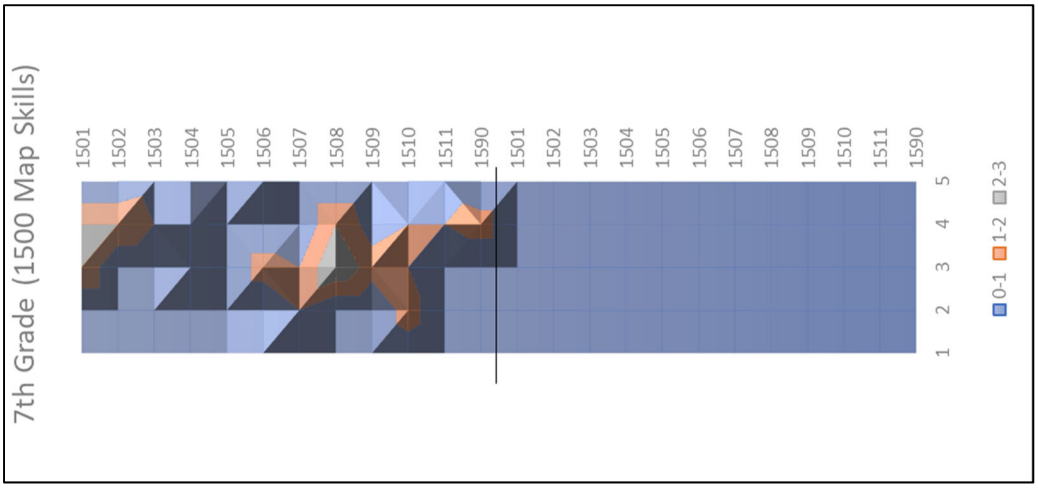


Figure 6.149. Geography Curriculum Correspondence between National Geography Standards and Utah Social Studies Standards

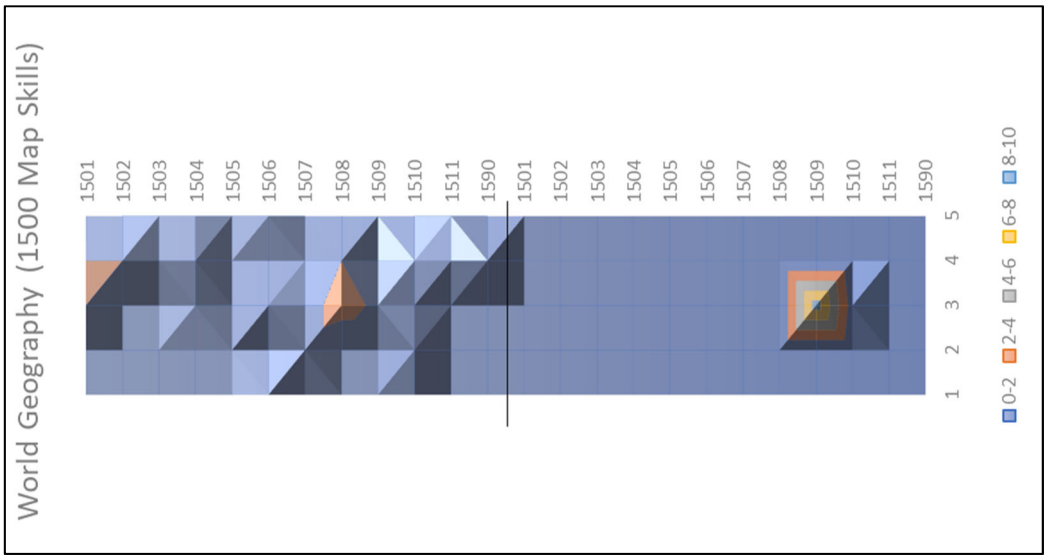


Figure 6.150. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

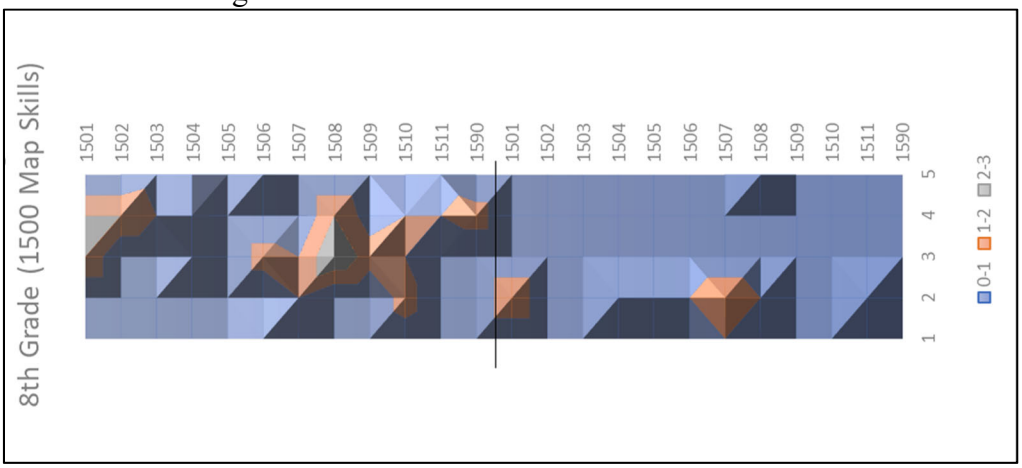


Figure 6.151. Geography Curriculum Correspondence between National Geography Standards and West Virginia Social Studies Standards

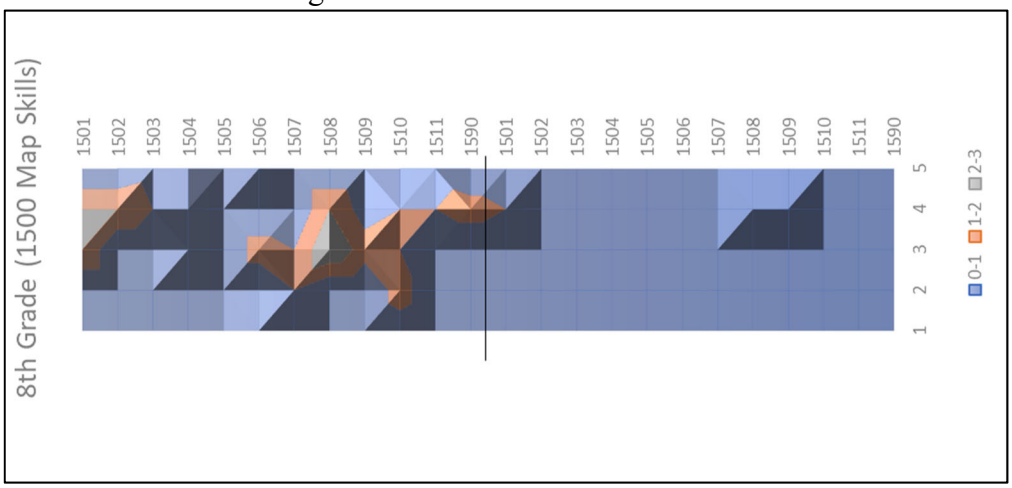


Figure 6.152. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 8 Inclusion of Places and Regions (1600)

The overall average alignment index for Places and Regions is 0.2871 at grade 8, which is quite similar to the index at the grade 4 level (Table 6.11). This indicates that this content topic is dominant in the teaching of geography in K-12 social studies. The range of the alignment index is from 0.0189 (Georgia 6th, 7th, and 8th grade) to 0.6105 (Missouri 6-8th grade). Examining Figure 6.153 – 6.181, the alignment between the cognitive student expectations demanded in *Geography for Life* (2012) are similar in state social studies standards. By grade 8, students are expected to understand, analyze, and evaluate the physical and human characteristics of places in the U.S. and the world (1601, 1602), the concept of regions and regionalization (1605), the types of regions (1606), and the influence culture and experience on people's perceptions of places and regions (1607).

Table 6.11. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 8 Benchmark for Places and Regions

State	1600 Places and Regions	State	1600 Places and Regions
Arkansas (7th)	0.2998	Iowa (6th)	0.5262
Connecticut (6 & 7)	0.5985	Iowa (7th)	0.1509
Delaware (6-8)	0.4864	Iowa (8th)	0.4717
Florida (6th)	0.0943	Kentucky (6th)	0.4686
Florida (7th)	0.1509	Kentucky (8th)	0.5283
Florida (8th)	0.1698	Maryland (8th)	0.3962
Georgia (6th)	0.0189	Missouri (6-8)	0.6105
Georgia (7th)	0.0189	Nevada (6-8)	0.4717
Georgia (8th)	0.0189	New Jersey (8th)	0.1509
Idaho (6-9 west)	0.0377	South Dakota (7th)	0.5519
Idaho (6-9 east)	0.0377	Utah (7th)	0.0755
Illinois (6-8)	0.3019	Virginia (World Geo)	0.4764
Indiana (6th)	0.1132	West Virginia (8th)	0.5252
Indiana (7th)	0.0377	Wyoming (8th)	0.4991
Indiana (8th)	0.0377	*Average*	*0.2871*

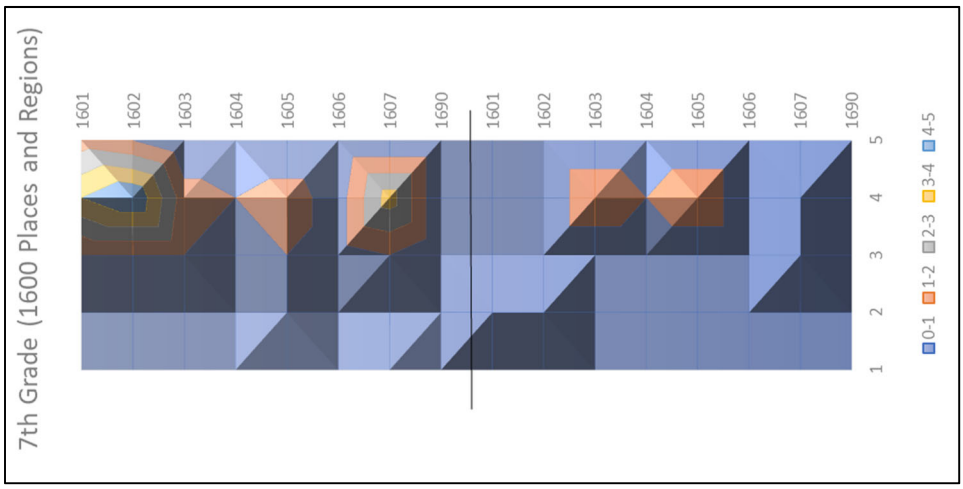


Figure 6.153. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

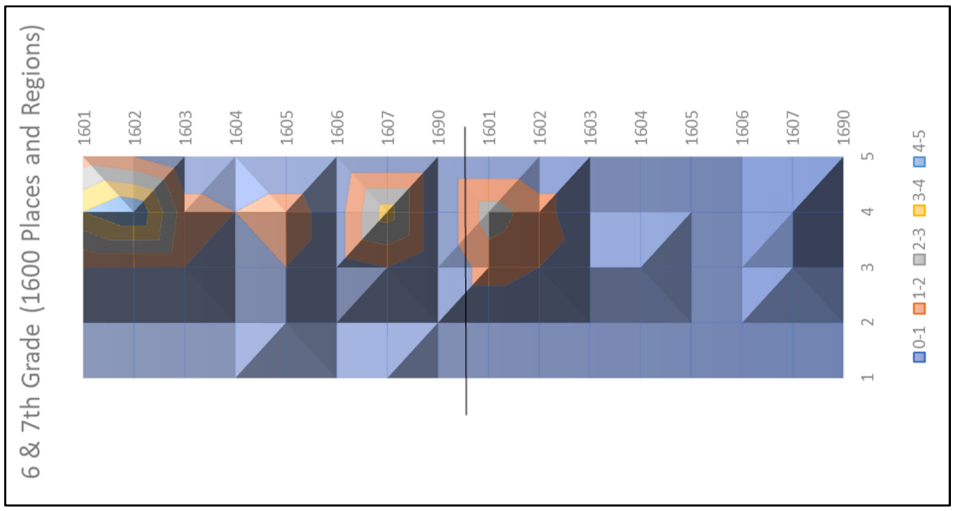


Figure 6.154. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

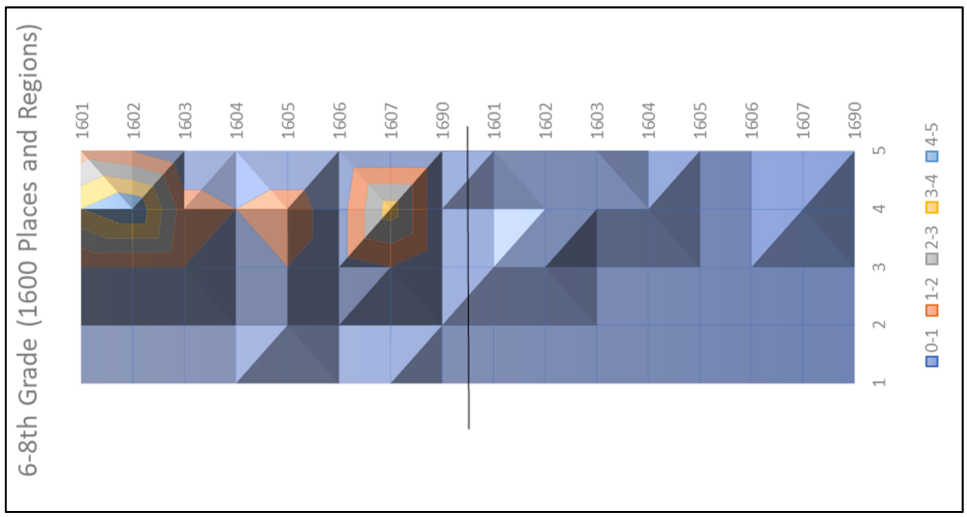


Figure 6.155. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

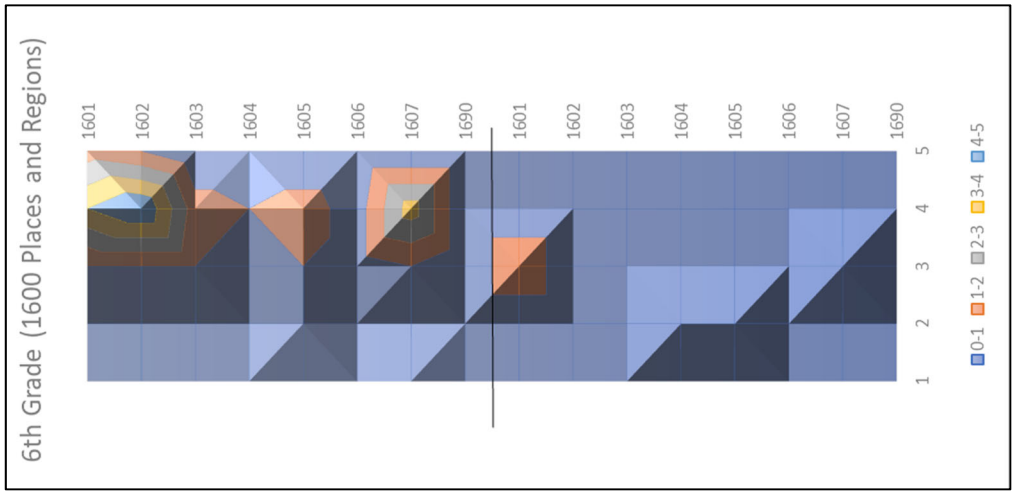


Figure 6.156. Geography Curriculum Correspondence between National Geography Standards and Florida (6th grade) Social Studies Standards

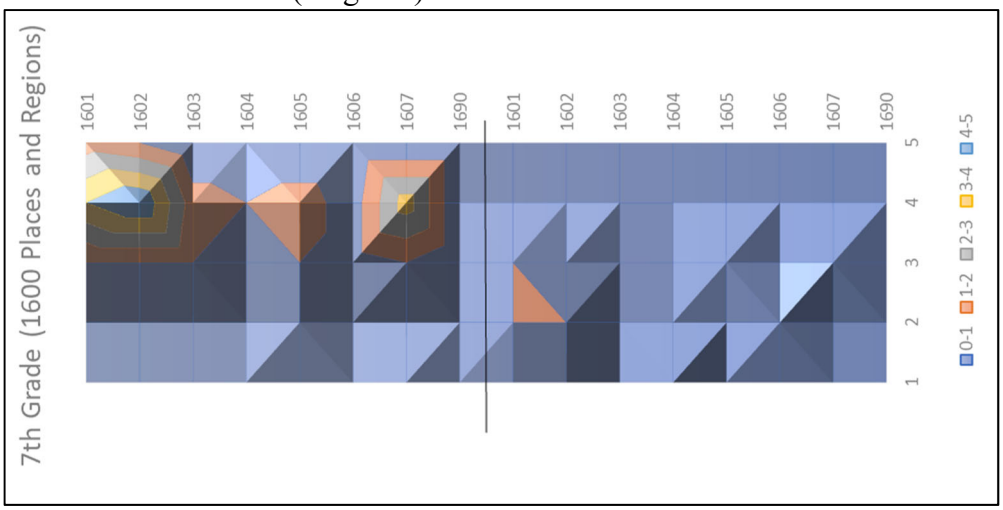


Figure 6.157. Geography Curriculum Correspondence between National Geography Standards and Florida (7th grade) Social Studies Standards

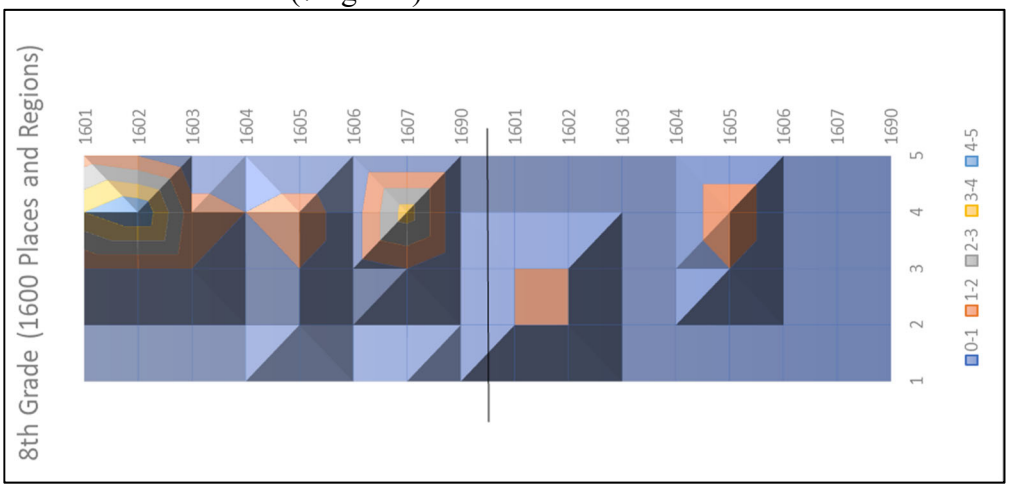


Figure 6.158. Geography Curriculum Correspondence between National Geography Standards and Florida (8th grade) Social Studies Standards

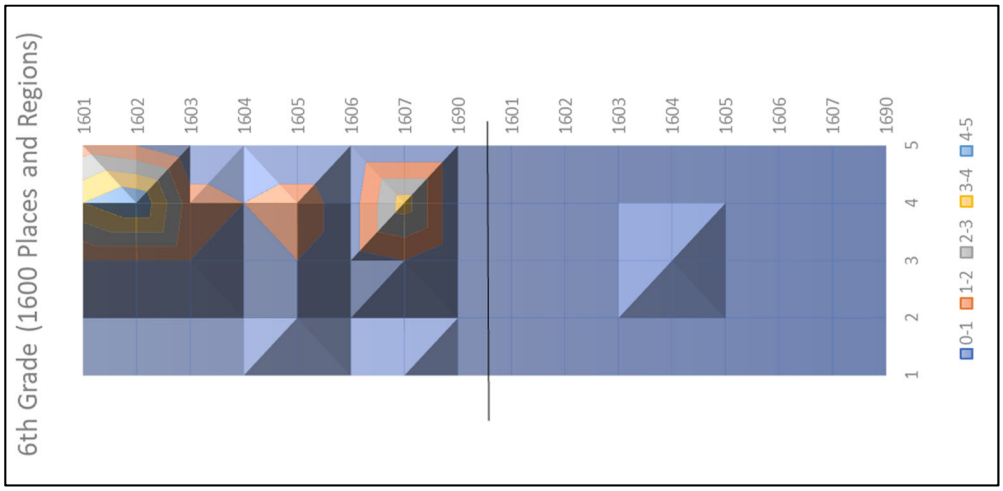


Figure 6.159. Geography Curriculum Correspondence between National Geography Standards and Georgia (6th grade) Social Studies Standards

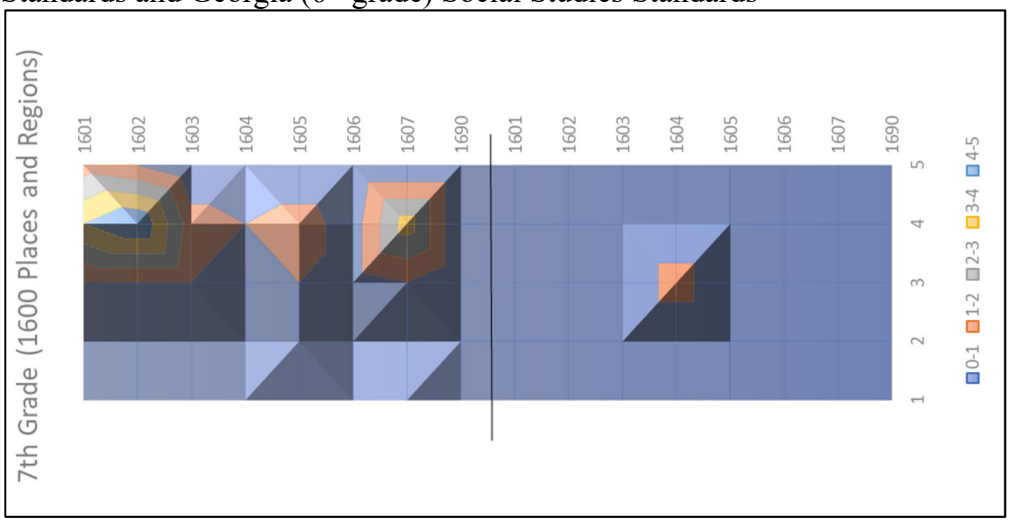


Figure 6.160. Geography Curriculum Correspondence between National Geography Standards and Georgia (7th grade) Social Studies Standards

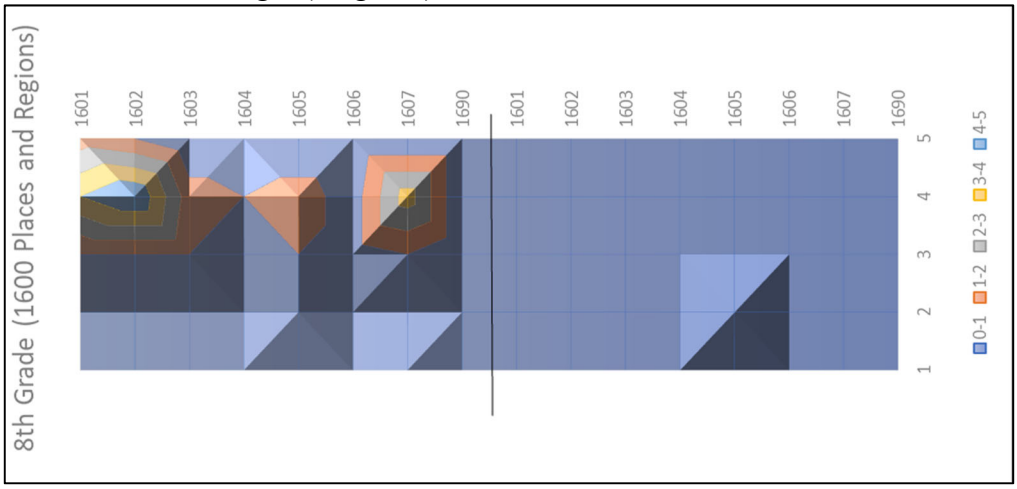


Figure 6.161. Geography Curriculum Correspondence between National Geography Standards and Georgia (8th grade) Social Studies Standards

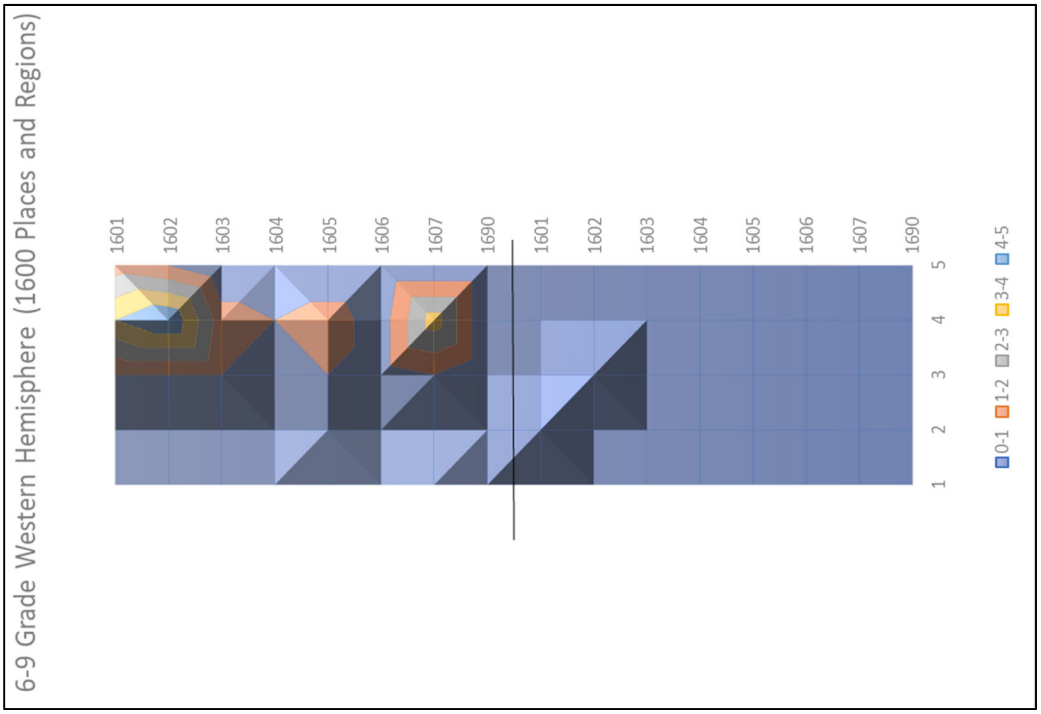


Figure 6.162. Geography Curriculum Correspondence between National Geography Standards and Idaho (western) Social Studies Standards

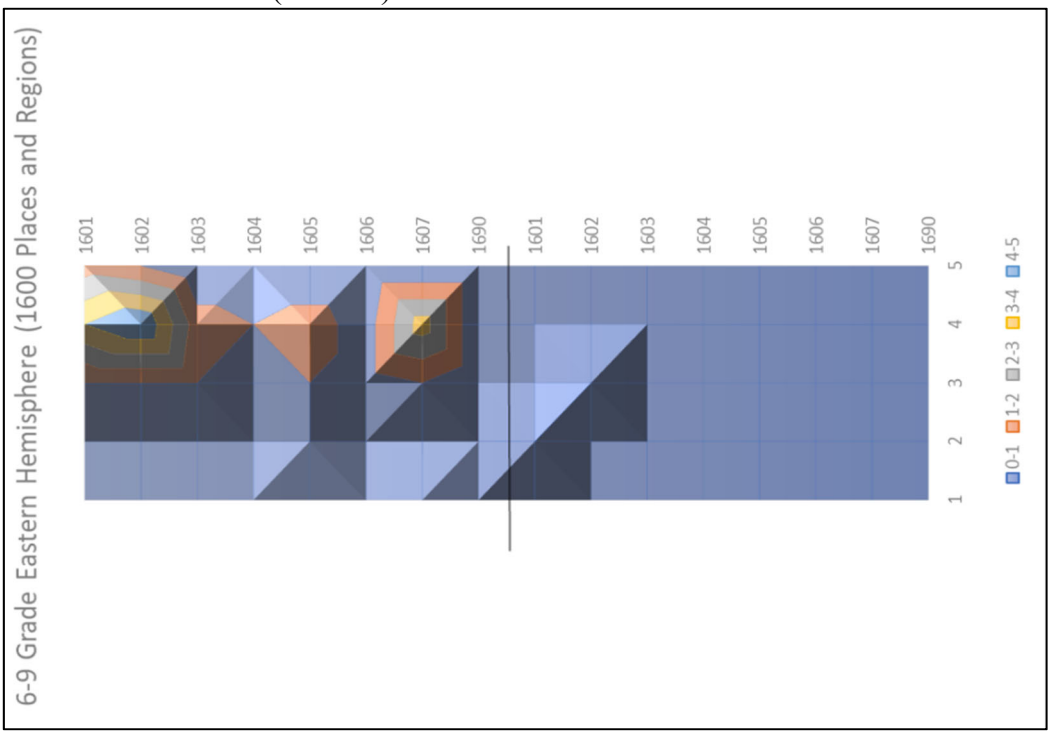


Figure 6.163. Geography Curriculum Correspondence between National Geography Standards and Idaho (eastern) Social Studies Standards

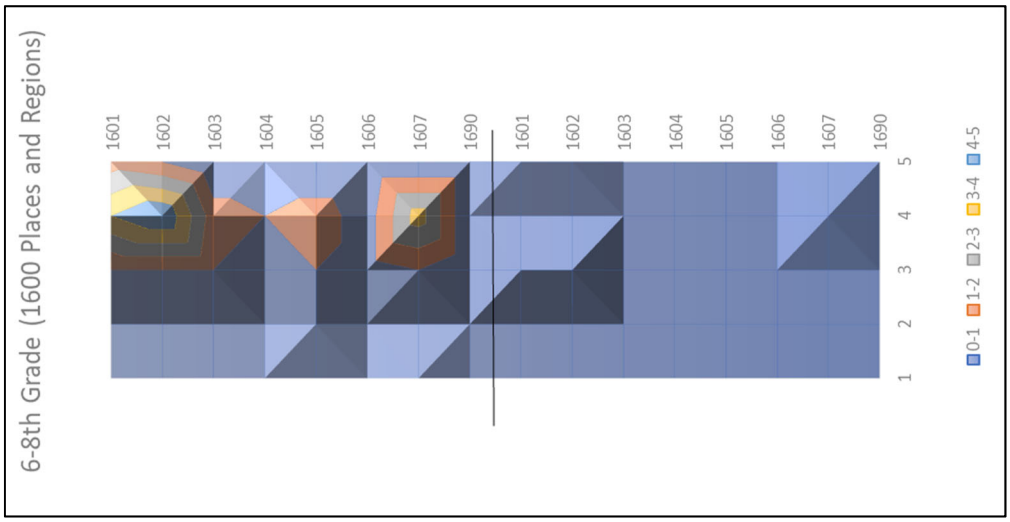


Figure 6.164. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

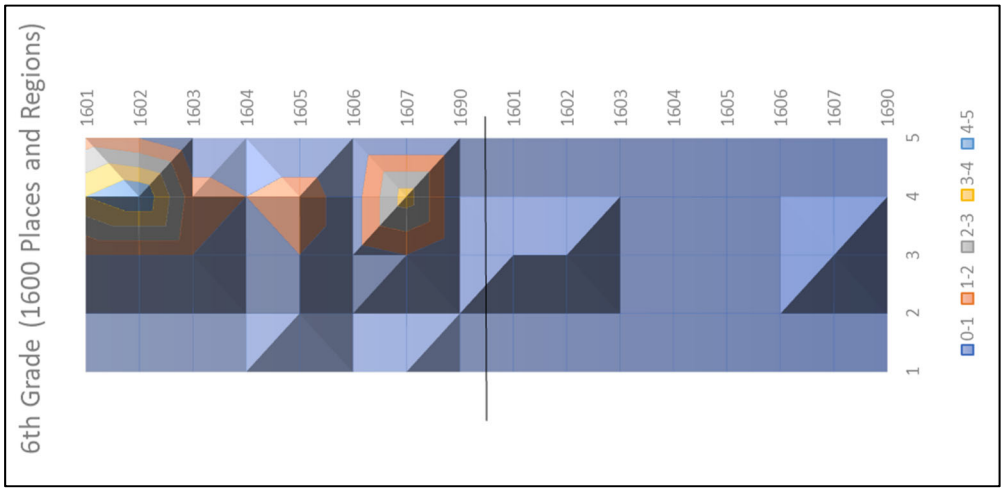


Figure 6.165. Geography Curriculum Correspondence between National Geography Standards and Indiana (6th grade) Social Studies Standards

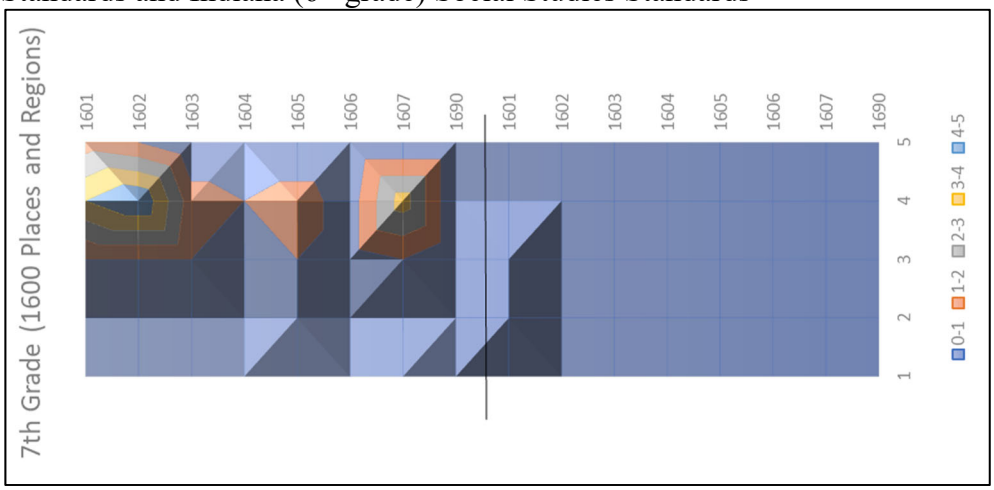


Figure 6.166. Geography Curriculum Correspondence between National Geography Standards and Indiana (7th grade) Social Studies Standards

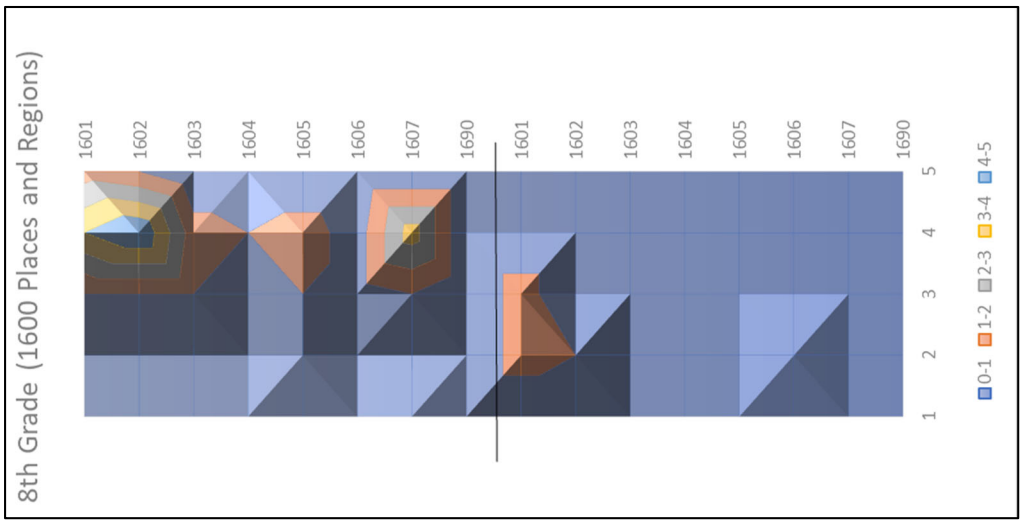


Figure 6.167. Geography Curriculum Correspondence between National Geography Standards and Indiana (8th grade) Social Studies Standards

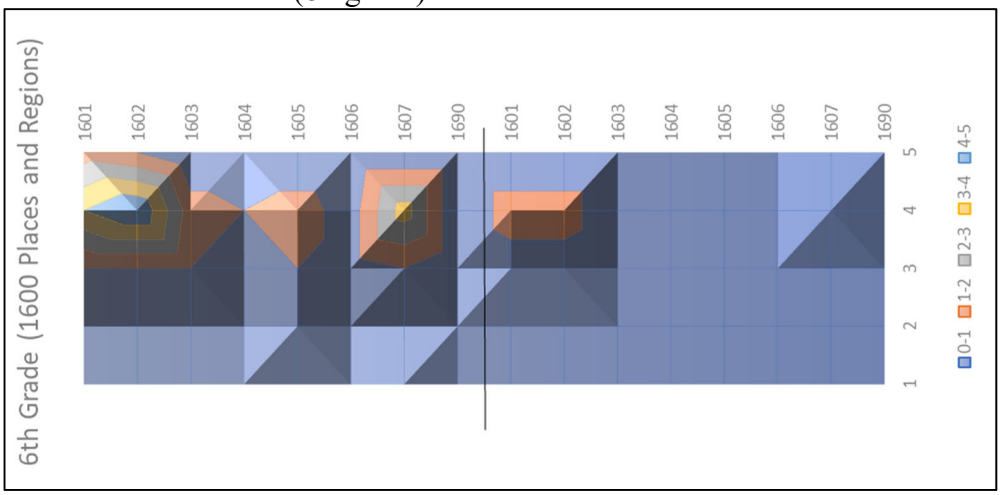


Figure 6.168. Geography Curriculum Correspondence between National Geography Standards and Iowa (6th grade) Social Studies Standards

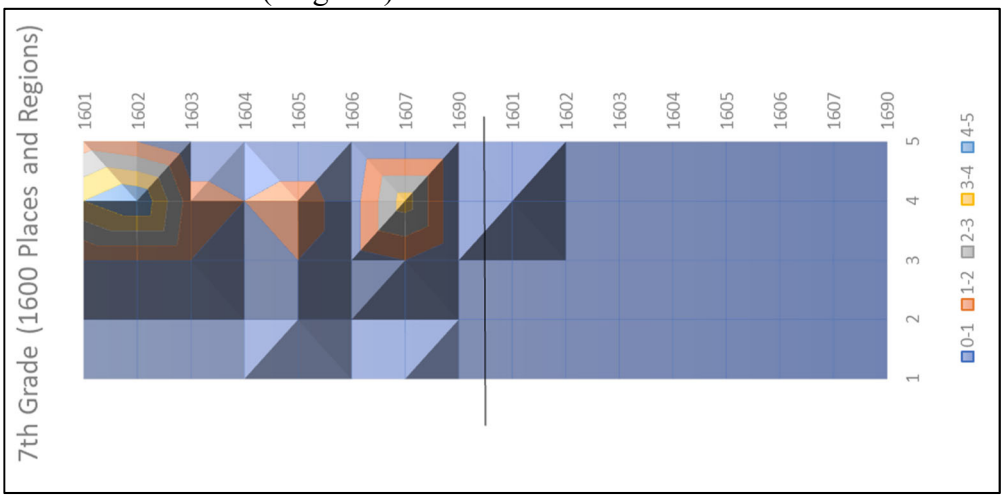


Figure 6.169. Geography Curriculum Correspondence between National Geography Standards and Iowa (7th grade) Social Studies Standards

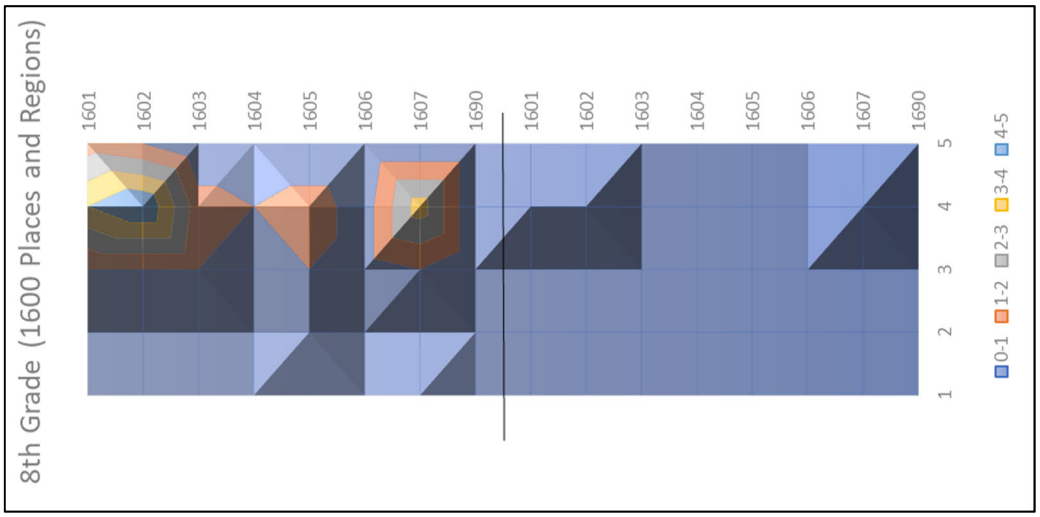


Figure 6.170. Geography Curriculum Correspondence between National Geography Standards and Iowa (8th grade) Social Studies Standards

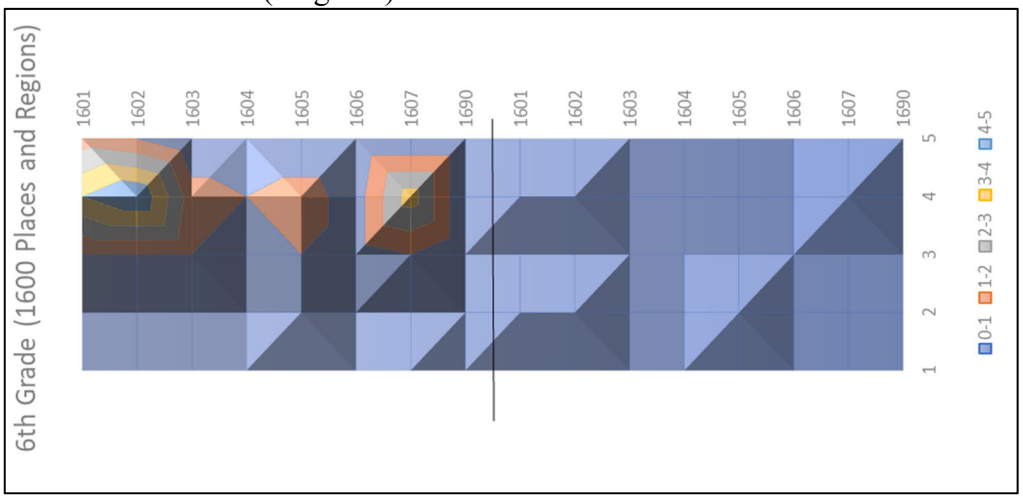


Figure 6.171. Geography Curriculum Correspondence between National Geography Standards and Kentucky (6th grade) Social Studies Standards

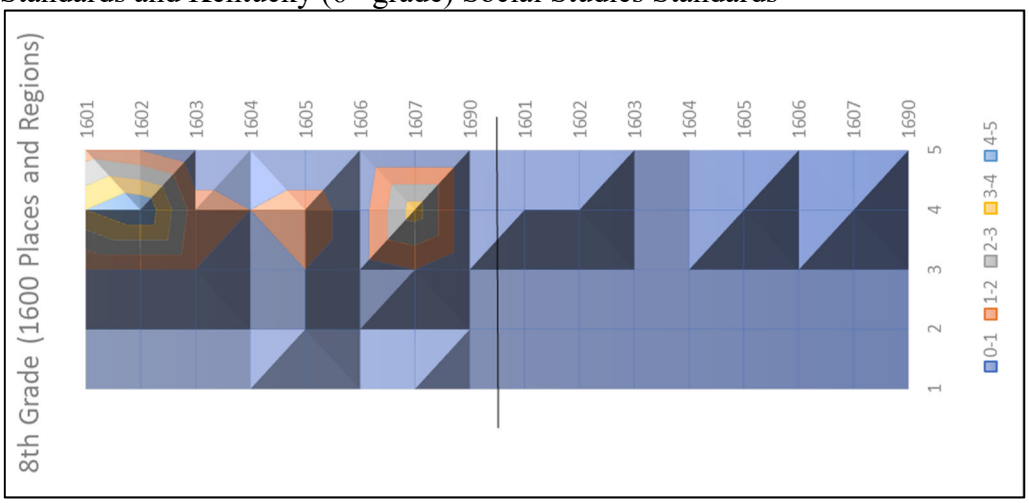


Figure 6.172. Geography Curriculum Correspondence between National Geography Standards and Kentucky (8th grade) Social Studies Standards

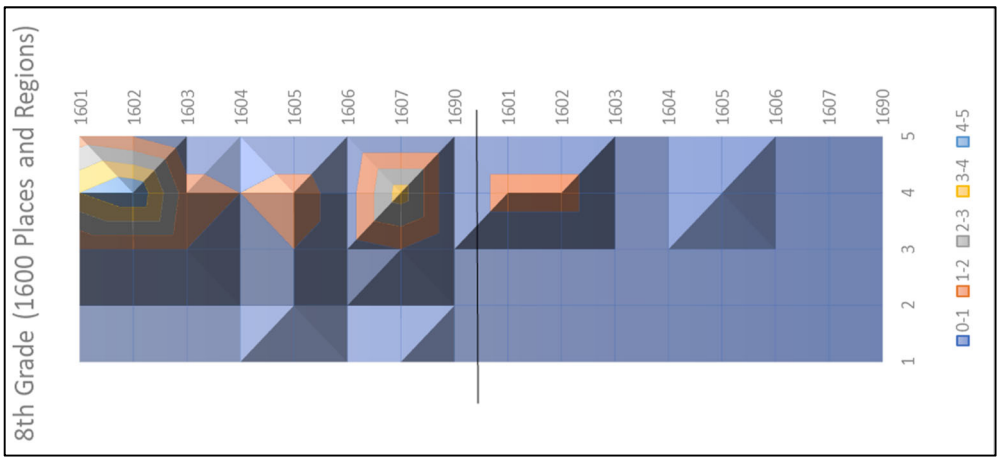


Figure 6.173. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

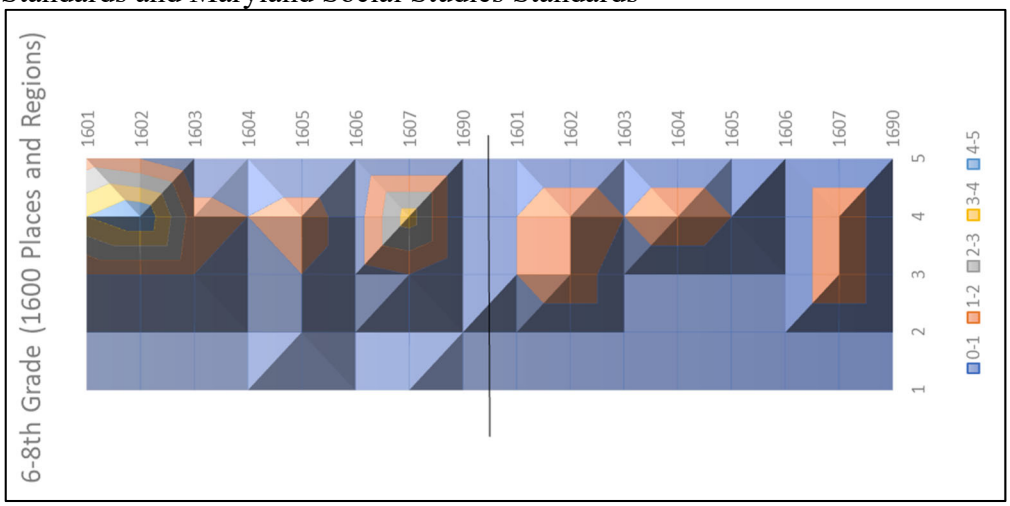


Figure 6.174. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

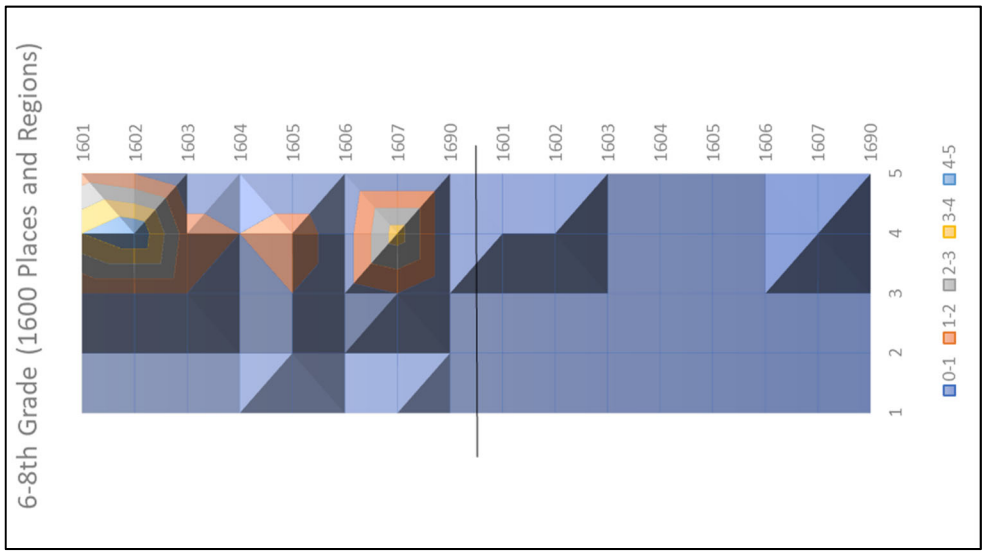


Figure 6.175. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

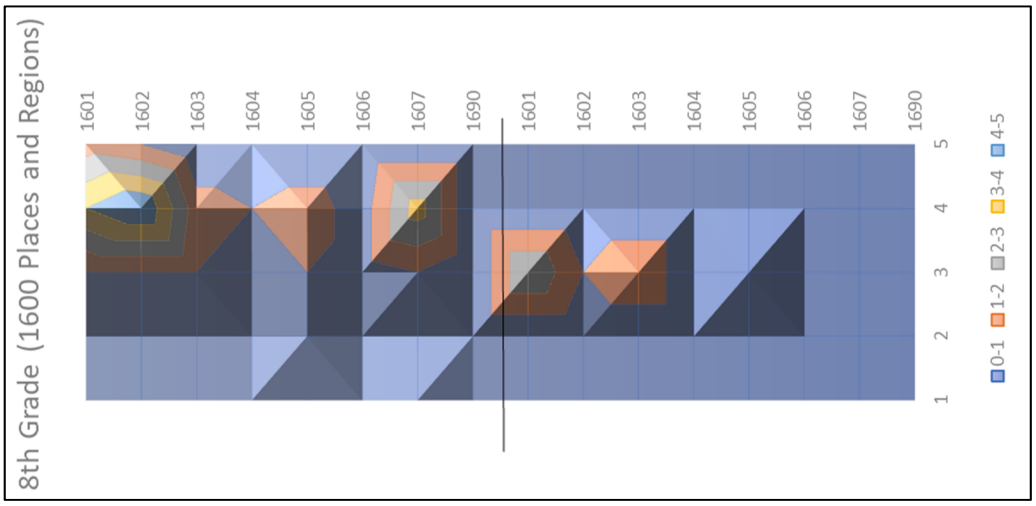


Figure 6.176. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

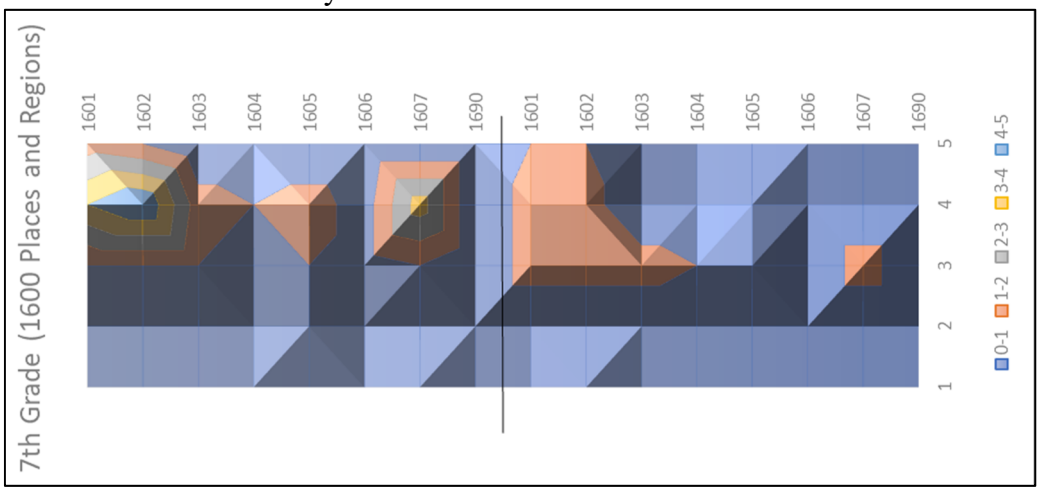


Figure 6.177. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

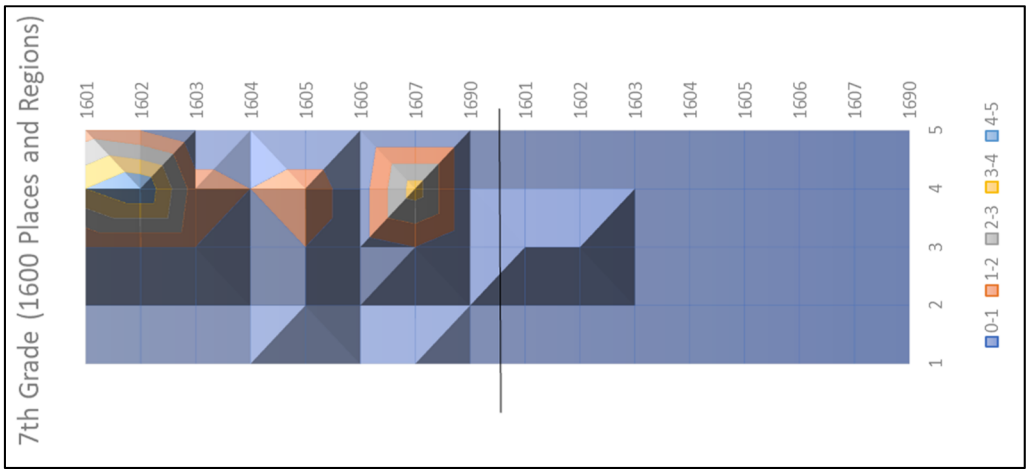


Figure 6.178. Geography Curriculum Correspondence between National Geography Standards and Utah Social Studies Standards

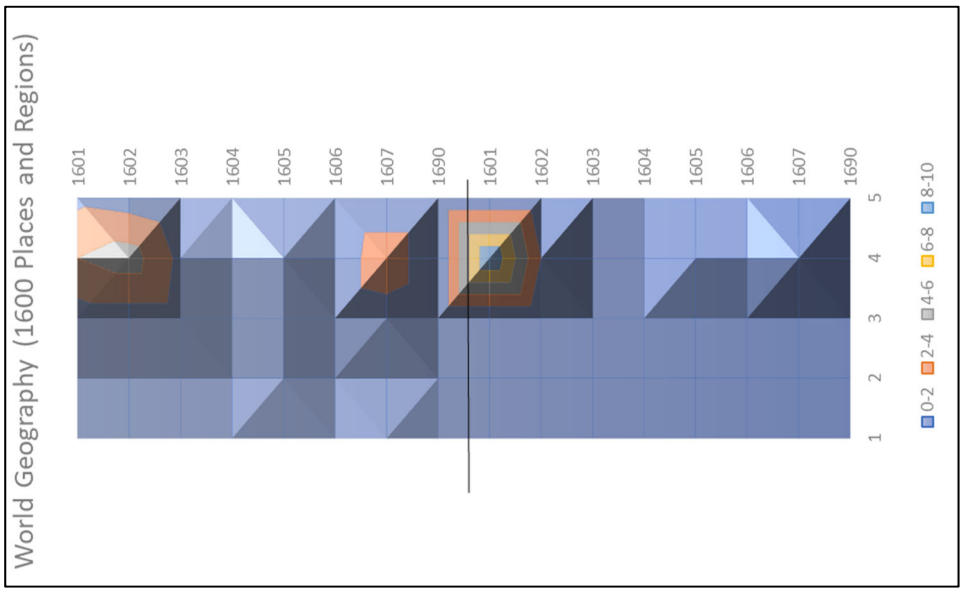


Figure 6.179. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

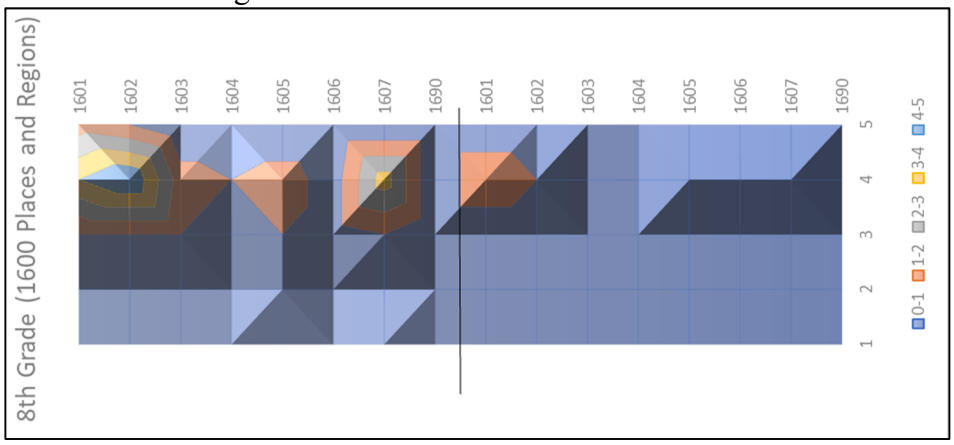


Figure 6.180. Geography Curriculum Correspondence between National Geography Standards and West Virginia Social Studies Standards

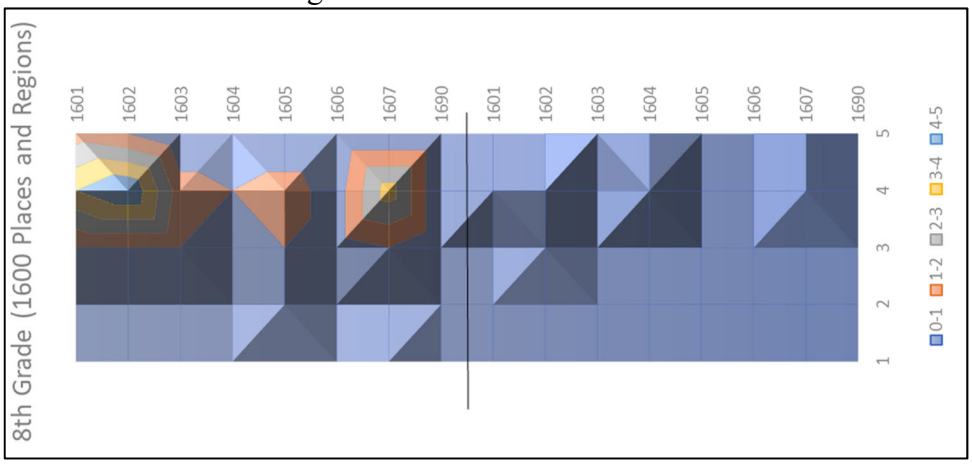


Figure 6.181. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 8 Inclusion of Physical Geography (1700)

There is more physical geography included in the grade 6-8 grade band than in fourth grade. The average alignment index is 0.1995 (significantly higher than the average at grade 4 which is 0.0684), with a range of 0.0 (Kentucky 8th grade) to 0.4483 (Missouri 6-8) (Table 6.12). There were still a number of states that did not include any physical geography standards, such as Arkansas, Iowa 7th and 8th grade, Maryland, Utah, and West Virginia. When reviewing the content maps in Figure 6.182 – 6.210 to see what the most dominant topics were climate, world climate regions, and major biomes (1701), and ecosystems and ecological processes (1707), were coded most.

Table 6.12. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 8 Benchmark for Physical Geography

State	1700 Physical Geography	State	1700 Physical Geography
Arkansas (7th)	NA	Iowa (6th)	0.2672
Connecticut (6 & 7)	0.0345	Iowa (7th)	NA
Delaware (6-8)	0.2414	Iowa (8th)	NA
Florida (6th)	0.1724	Kentucky (6th)	0.1121
Florida (7th)	0.1724	Kentucky (8th)	0.0000
Florida (8th)	0.2414	Maryland (8th)	NA
Georgia (6th)	0.0690	Missouri (6-8)	0.4483
Georgia (7th)	0.0690	Nevada (6-8)	NA
Georgia (8th)	0.0690	New Jersey (8th)	0.2069
Idaho (6-9 west)	0.4187	South Dakota (7th)	0.2414
Idaho (6-9 east)	0.4187	Utah (7th)	NA
Illinois (6-8)	0.0690	Virginia (World Geo)	0.4138
Indiana (6th)	0.1379	West Virginia (8th)	NA
Indiana (7th)	0.1034	Wyoming (8th)	0.3793
Indiana (8th)	0.1034	*Average*	*0.1995*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

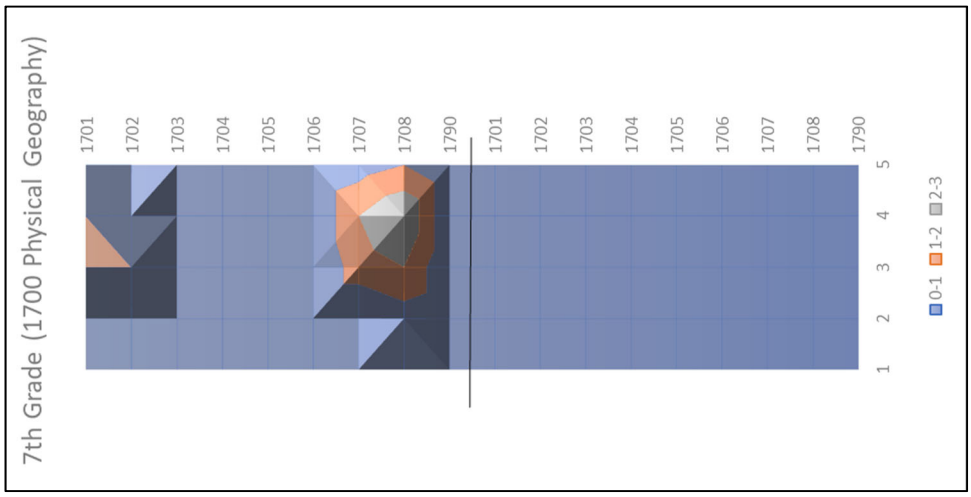


Figure 6.182. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

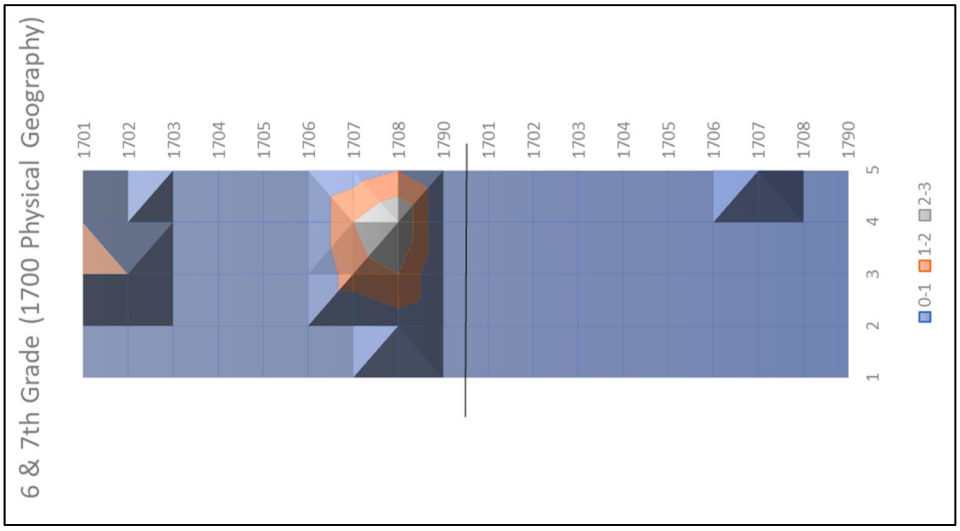


Figure 6.183. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

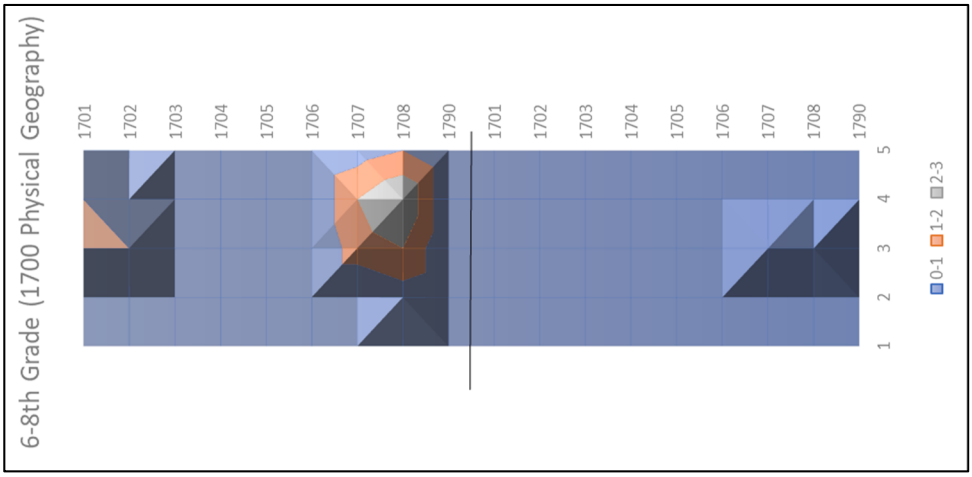


Figure 6.184. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

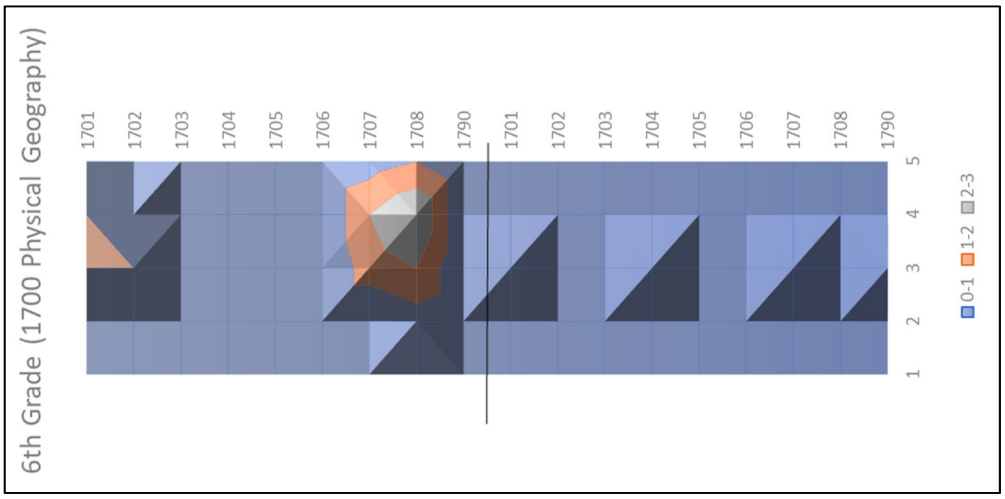


Figure 6.185. Geography Curriculum Correspondence between National Geography Standards and Florida (6th grade) Social Studies Standards

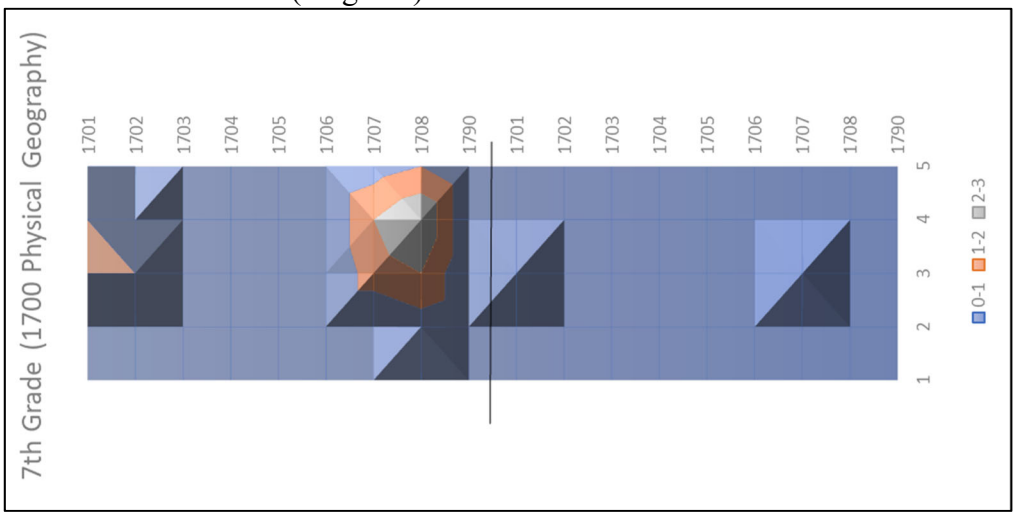


Figure 6.186. Geography Curriculum Correspondence between National Geography Standards and Florida (7th grade) Social Studies Standards

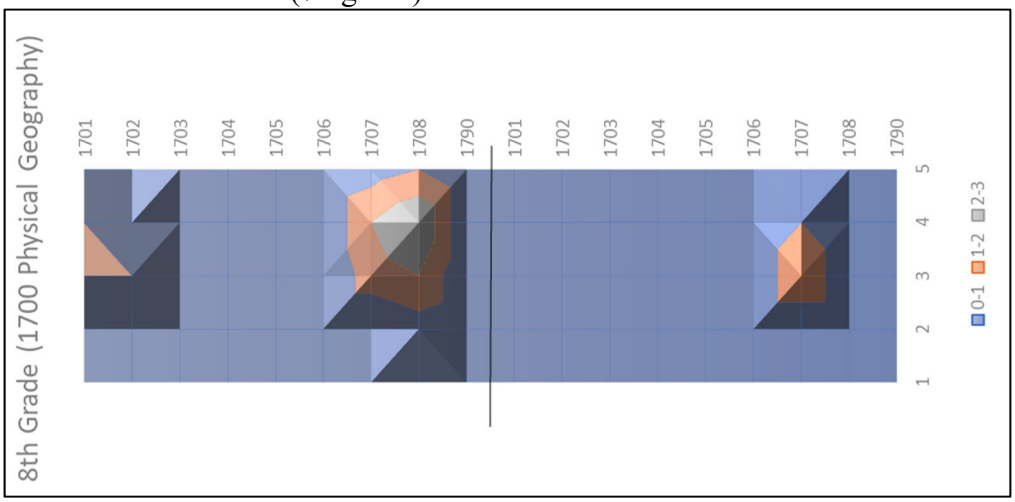


Figure 6.187. Geography Curriculum Correspondence between National Geography Standards and Florida (8th grade) Social Studies Standards

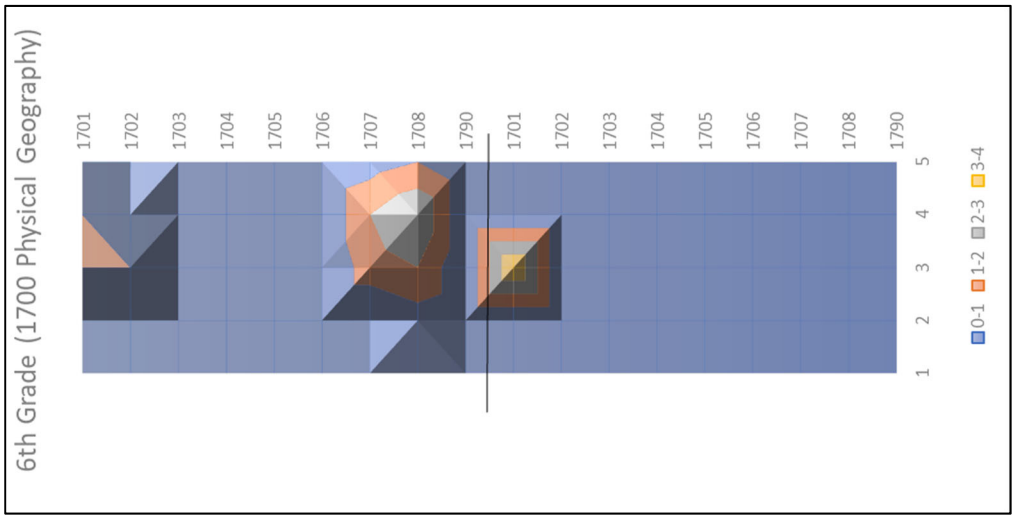


Figure 6.188. Geography Curriculum Correspondence between National Geography Standards and Georgia (6th grade) Social Studies Standards

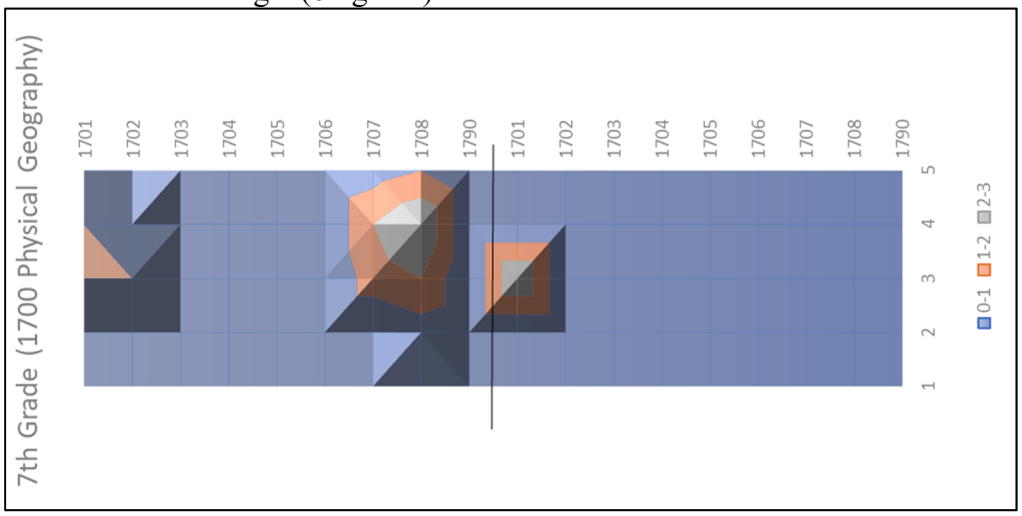


Figure 6.189. Geography Curriculum Correspondence between National Geography Standards and Georgia (7th grade) Social Studies Standards

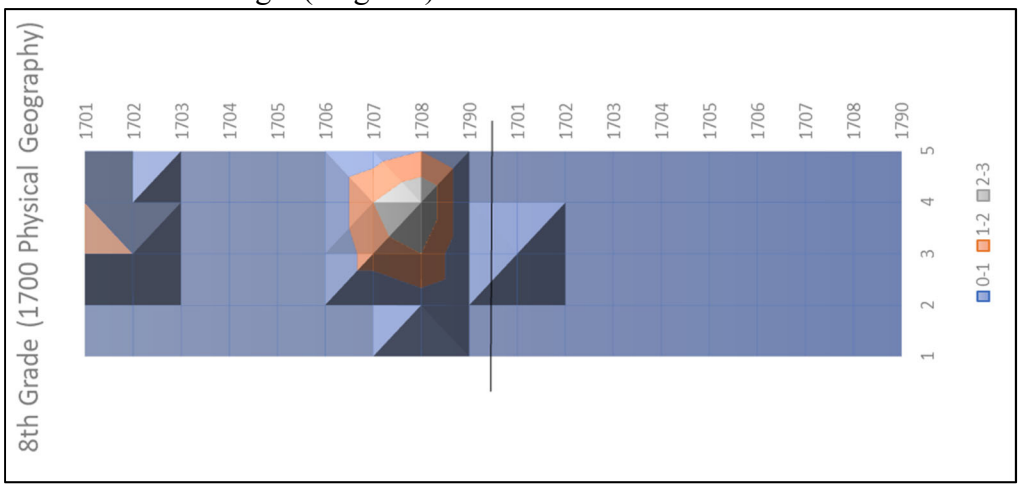


Figure 6.190. Geography Curriculum Correspondence between National Geography Standards and Georgia (8th grade) Social Studies Standards

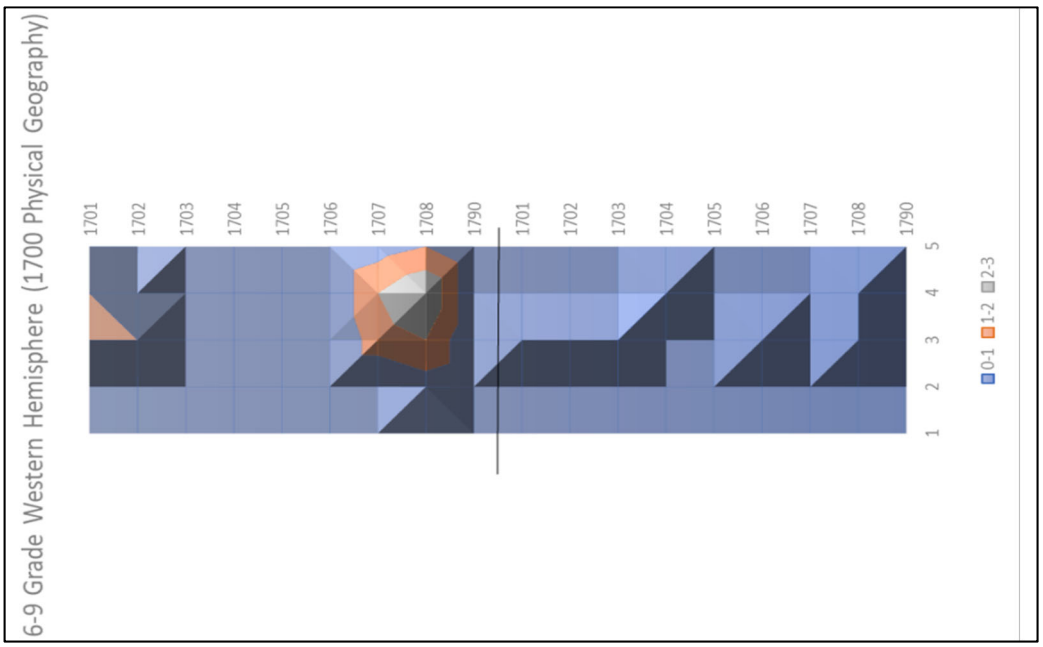


Figure 6.191. Geography Curriculum Correspondence between National Geography Standards and Idaho (western) Social Studies Standards

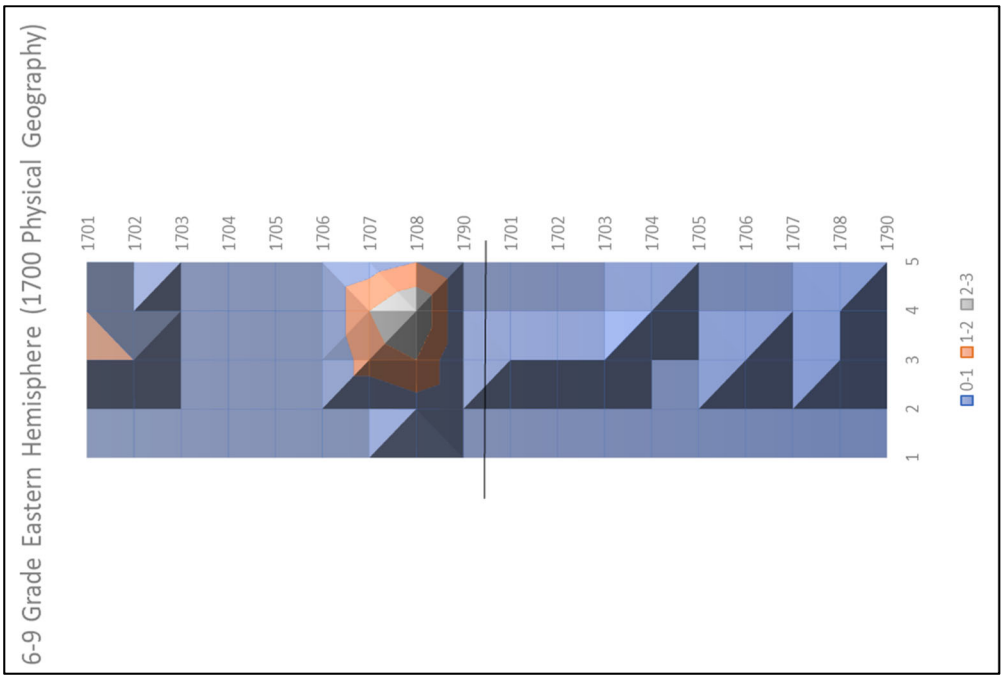


Figure 6.192. Geography Curriculum Correspondence between National Geography Standards and Idaho (eastern) Social Studies Standards

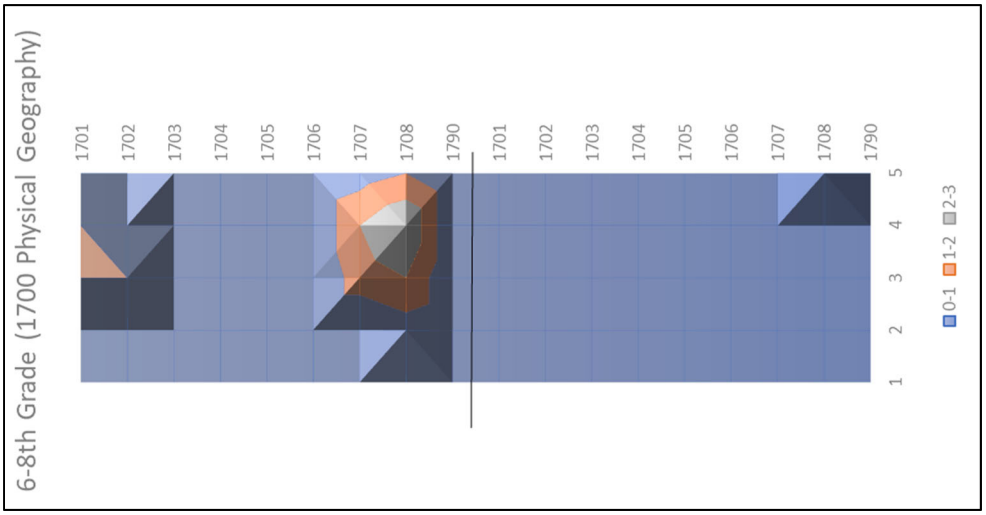


Figure 6.193. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

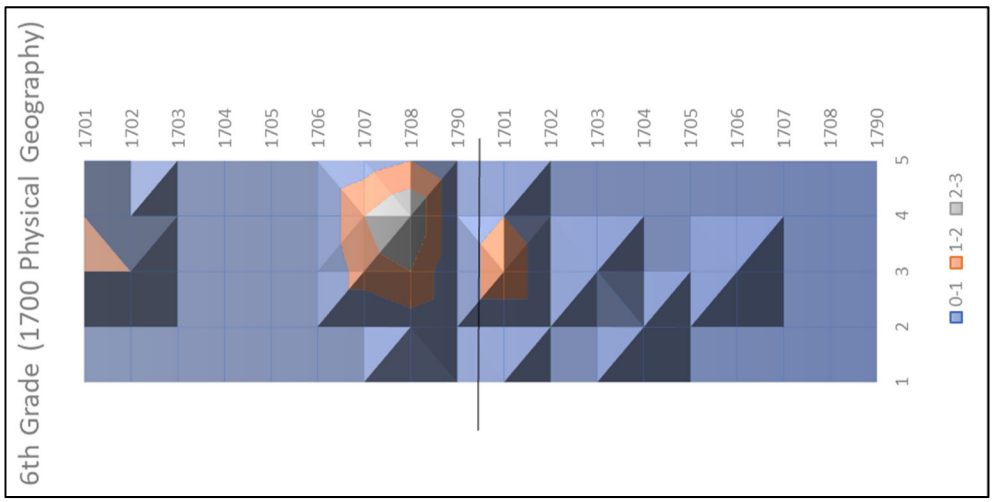


Figure 6.194. Geography Curriculum Correspondence between National Geography Standards and Indiana (6th grade) Social Studies Standards

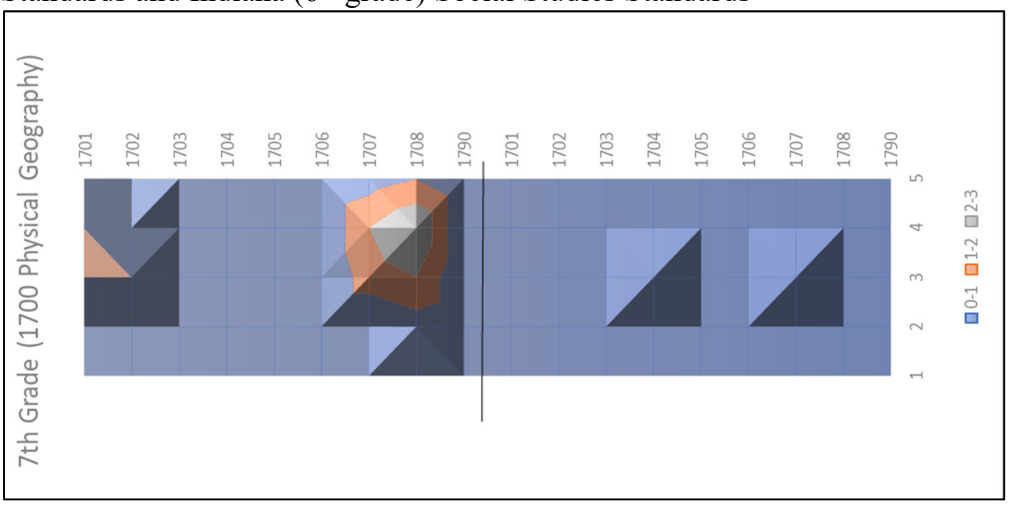


Figure 6.195. Geography Curriculum Correspondence between National Geography Standards and Indiana (7th grade) Social Studies Standards

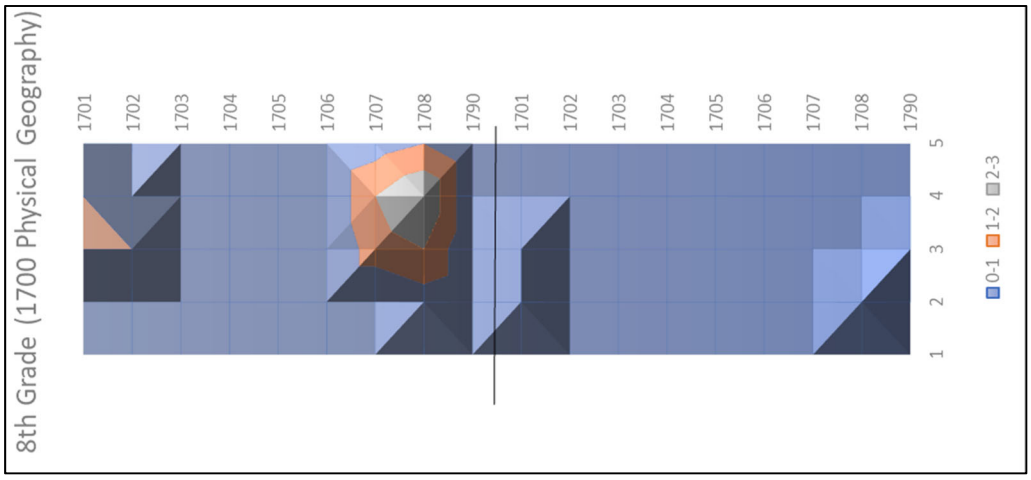


Figure 6.196. Geography Curriculum Correspondence between National Geography Standards and Indiana (8th grade) Social Studies Standards

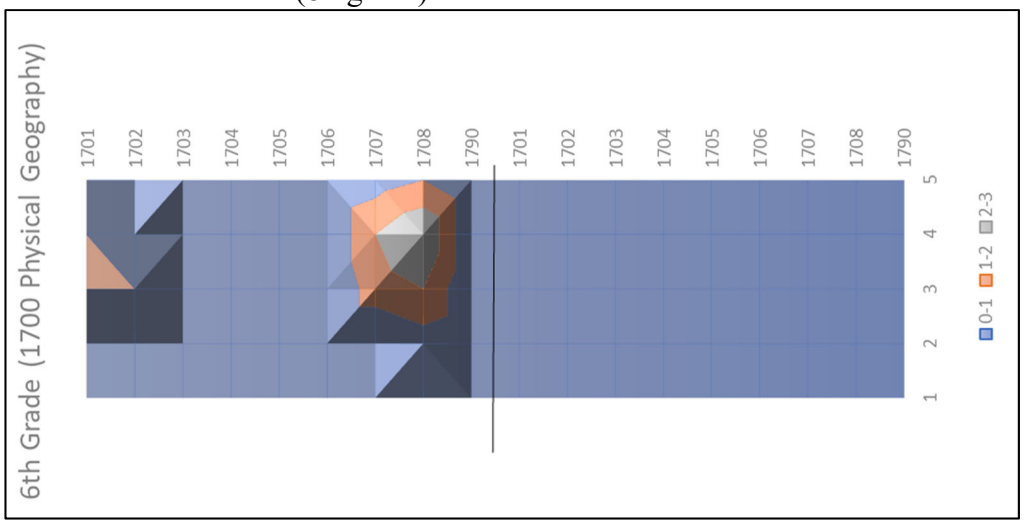
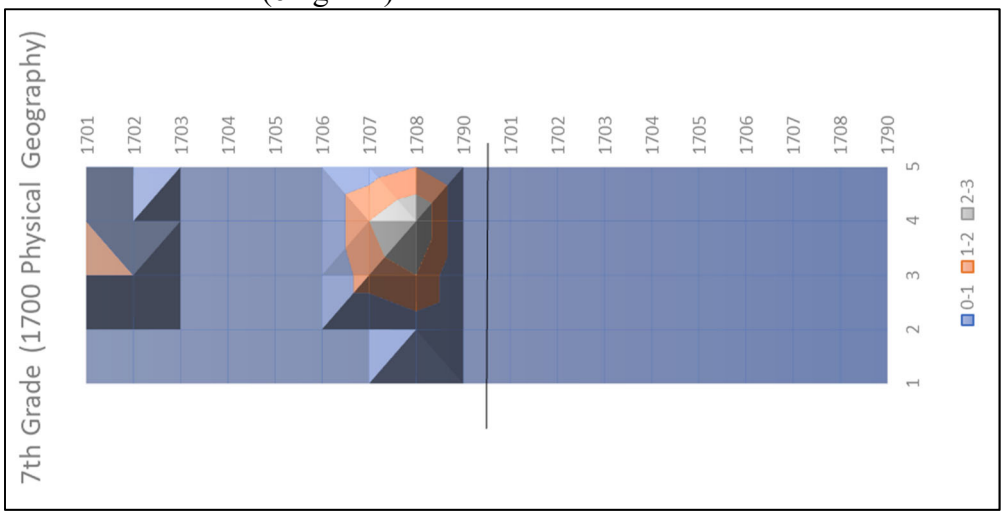


Figure 6.197. Geography Curriculum Correspondence between National Geography Standards and Iowa (6th grade) Social Studies Standards



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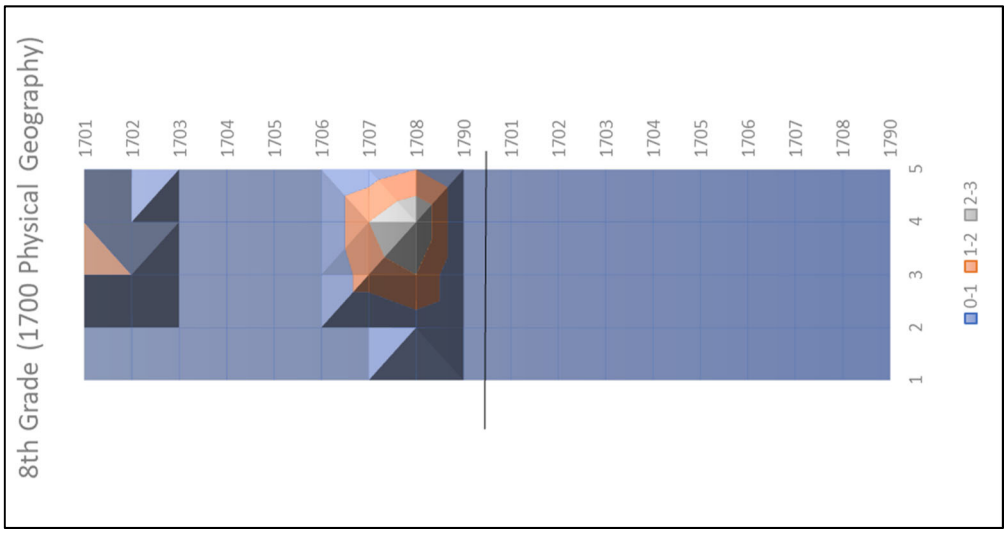


Figure 6.199. Geography Curriculum Correspondence between National Geography Standards and Iowa (8th grade) Social Studies Standards

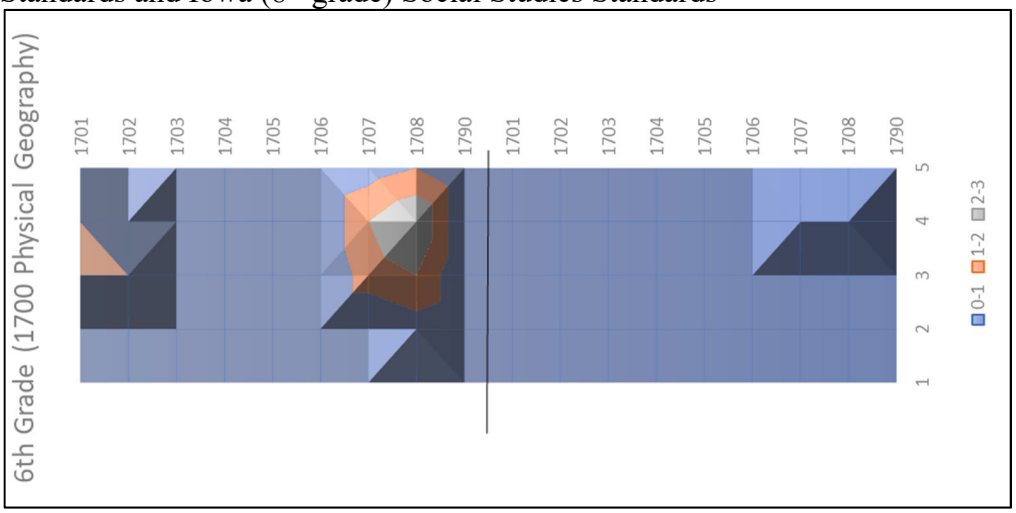


Figure 6.200. Geography Curriculum Correspondence between National Geography Standards and Kentucky (6th grade) Social Studies Standards

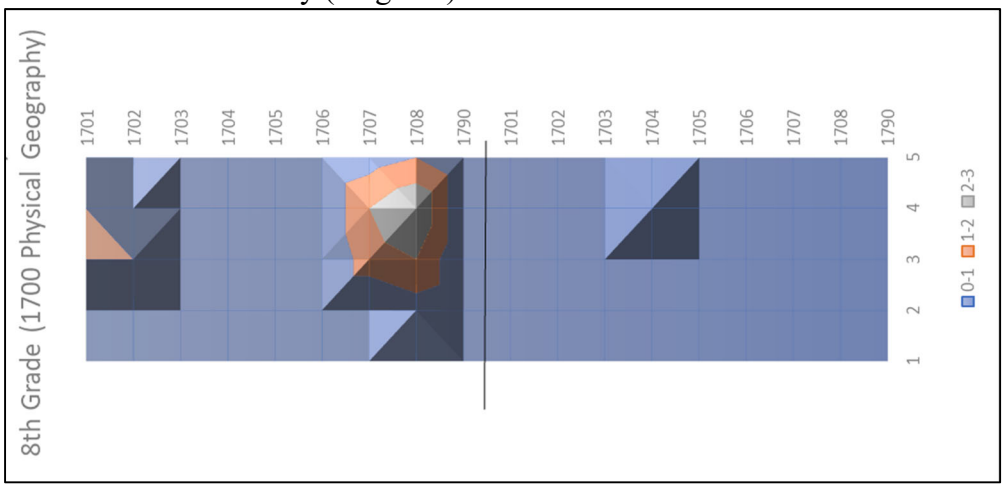


Figure 6.201. Geography Curriculum Correspondence between National Geography Standards and Kentucky (8th grade) Social Studies Standards

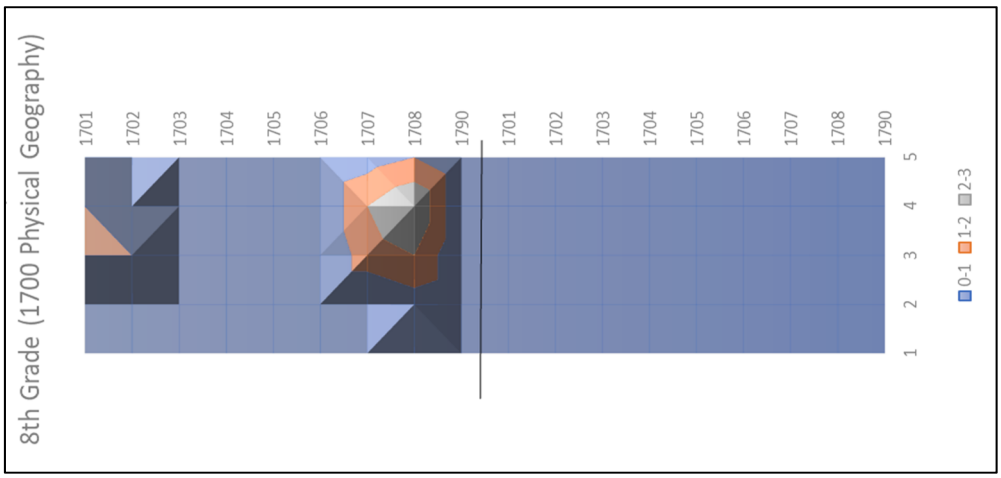


Figure 6.202. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

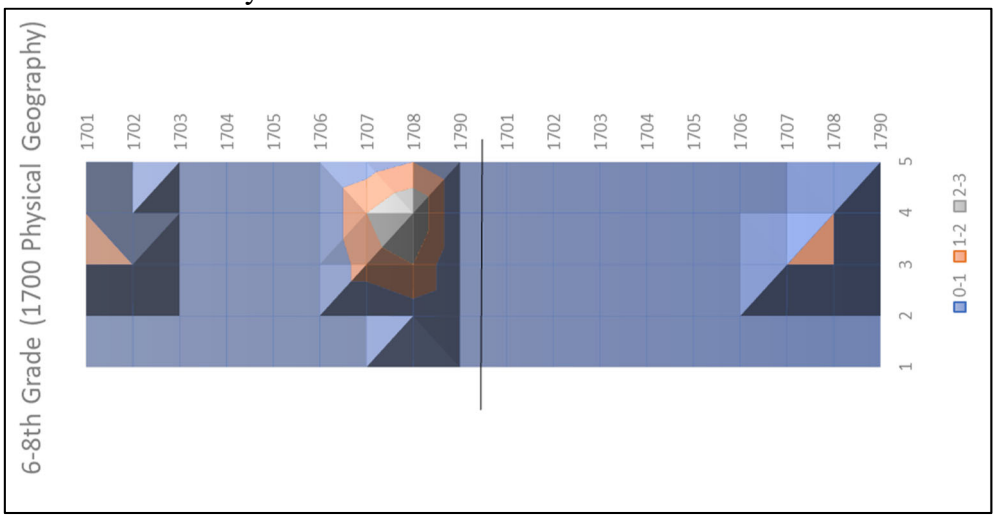


Figure 6.203. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

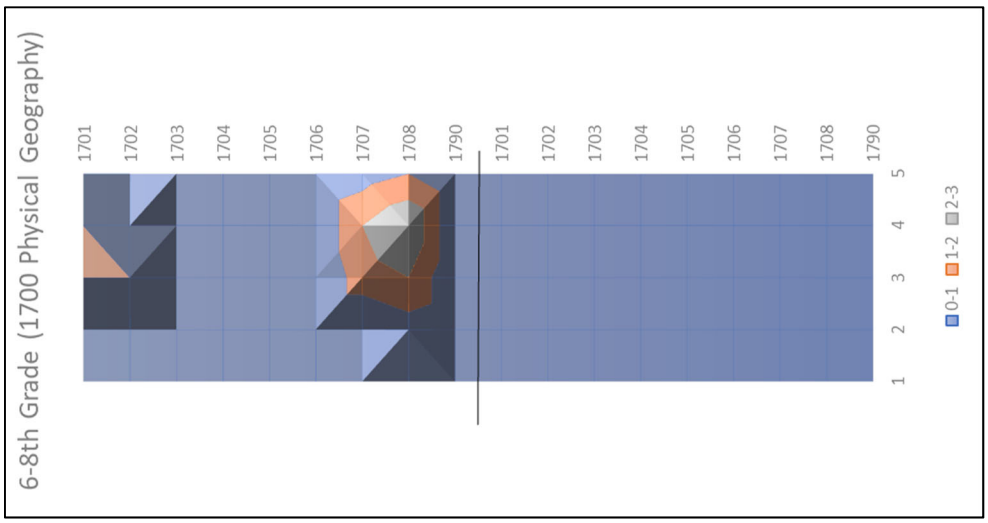


Figure 6.204. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

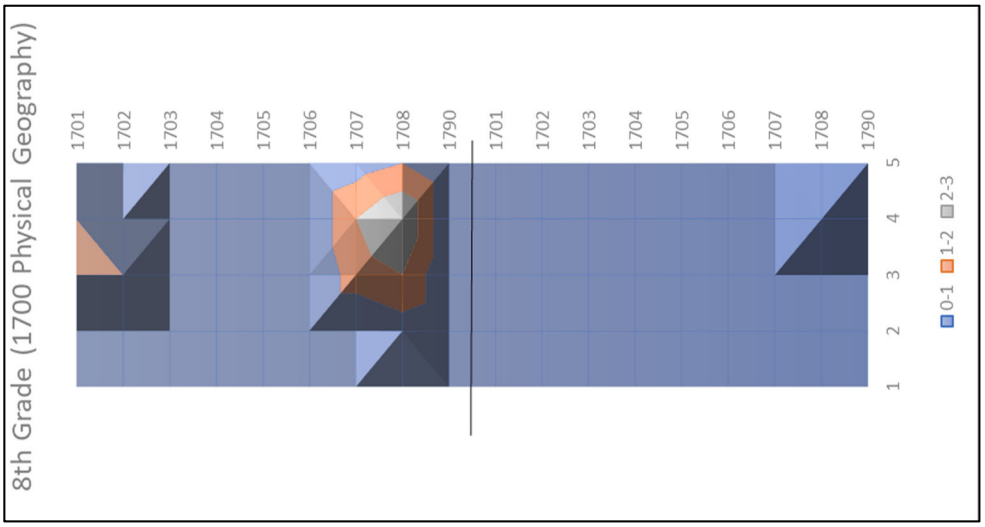


Figure 6.205. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

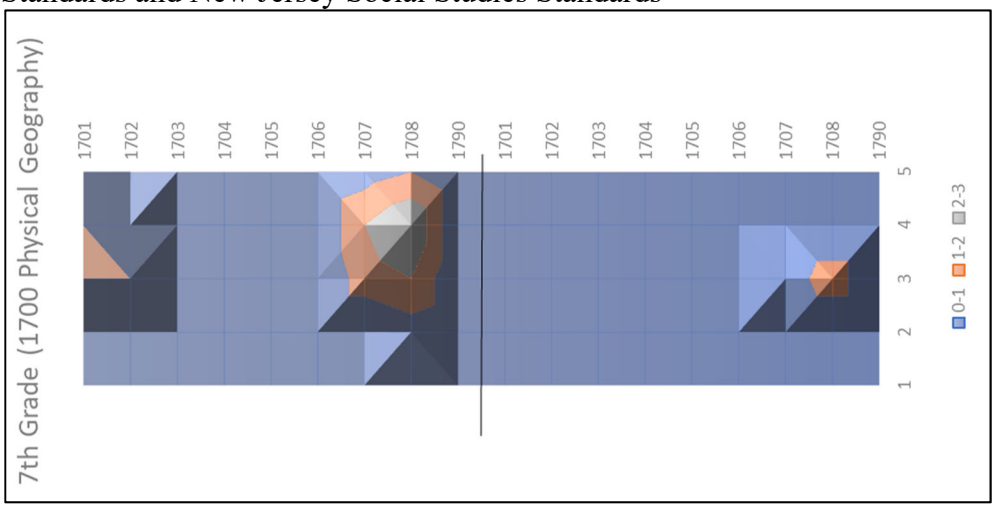


Figure 6.206. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

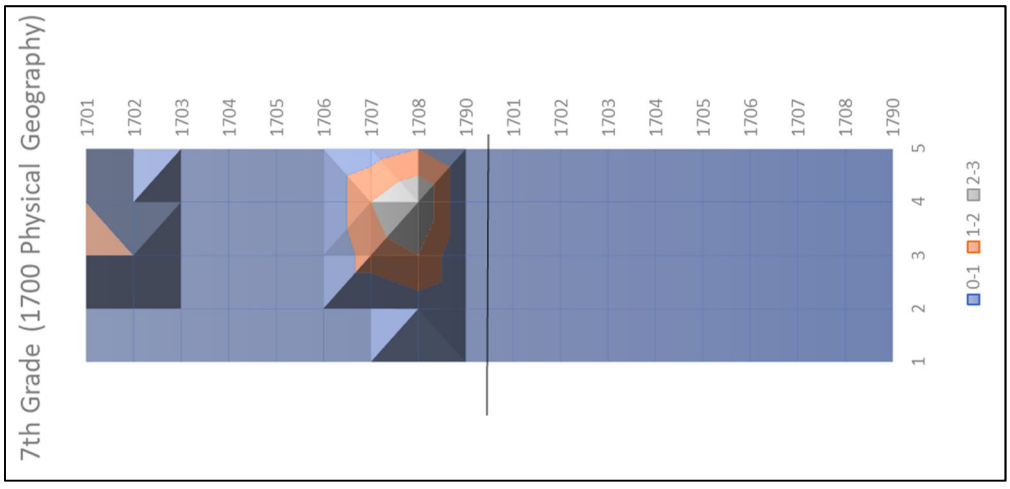


Figure 6.207. Geography Curriculum Correspondence between National Geography Standards and Utah Social Studies Standards

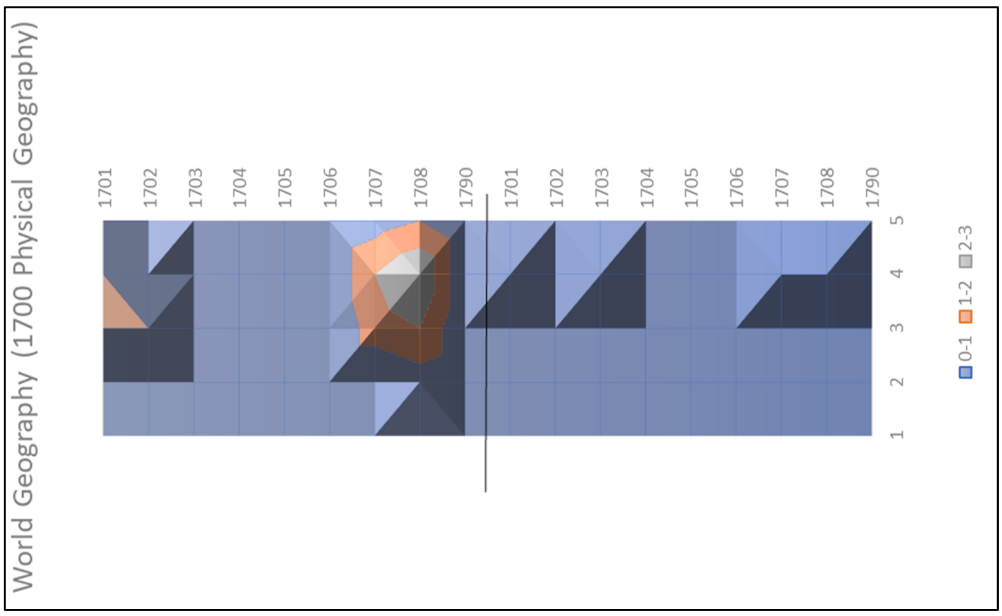


Figure 6.208. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

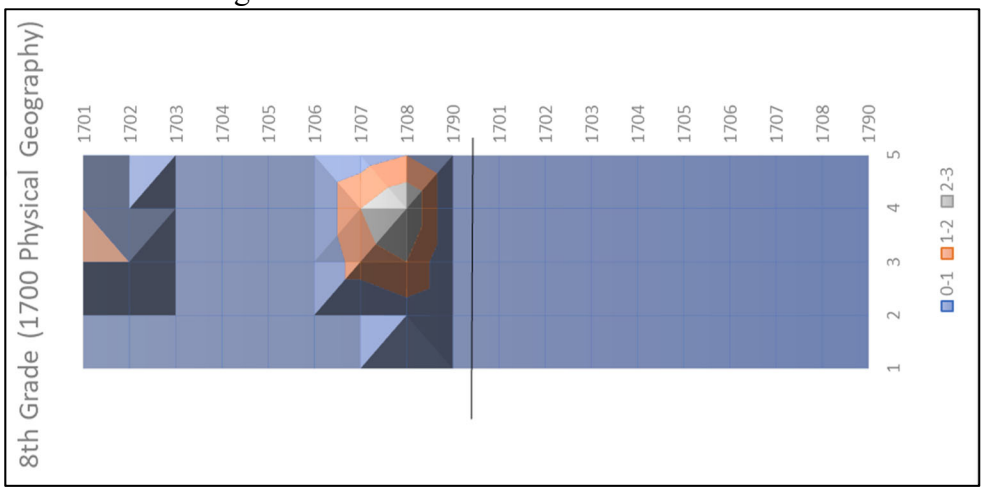


Figure 6.209. Geography Curriculum Correspondence between National Geography Standards and West Virginia Social Studies Standards

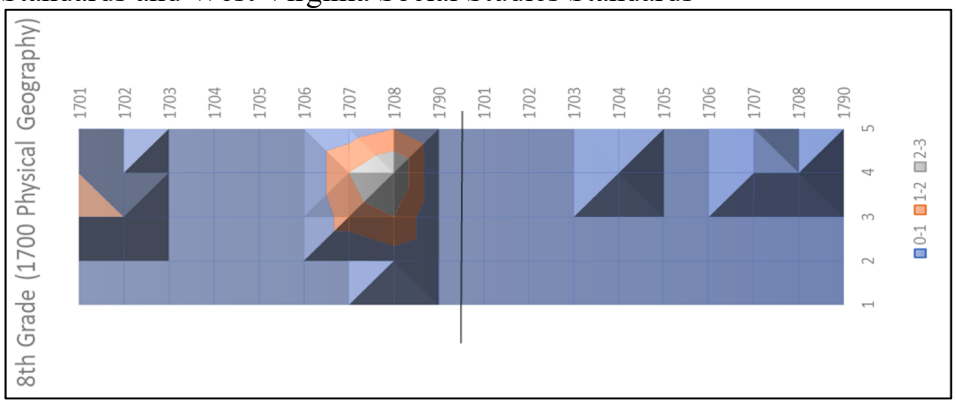


Figure 6.210. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 8 Inclusion of Human and Cultural Geography (1800)

Human and Cultural Geography is the third most dominant content area of state geography standards at grade 8. The alignment index of state standards to the national geography standards is an average of 0.2862 (Table 6.13). Every state social studies framework included human and cultural geography standards, except for Georgia at grade 8, but they did at 6th and 7th grade. The alignment index ranged from 0.0755 (Missouri 6-8) to 0.5908 (Maryland). Looking through Figures 6.211 – 6.239 the majority of states include the breadth of topic knowledge covered by human and cultural geography, and they are relatively aligned with the student expectations identified in the national geography standards.

Table 6.13. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 8 Benchmark for Human and Cultural Geography

State	1800 Human and Cultural Geography	State	1800 Human and Cultural Geography
Arkansas (7th)	0.4972	Iowa (6th)	0.3962
Connecticut (6 & 7)	0.5253	Iowa (7th)	0.1509
Delaware (6-8)	0.3019	Iowa (8th)	0.1132
Florida (6th)	0.1321	Kentucky (6th)	0.2749
Florida (7th)	0.0943	Kentucky (8th)	0.2830
Florida (8th)	0.3396	Maryland (8th)	0.5908
Georgia (6th)	0.1698	Missouri (6-8)	0.0755
Georgia (7th)	0.1698	Nevada (6-8)	0.3396
Georgia (8th)	NA	New Jersey (8th)	0.3168
Idaho (6-9 west)	0.3375	South Dakota (7th)	0.4689
Idaho (6-9 east)	0.3375	Utah (7th)	0.3585
Illinois (6-8)	0.3019	Virginia (World Geo)	0.3404
Indiana (6th)	0.1509	West Virginia (8th)	0.1321
Indiana (7th)	0.1509	Wyoming (8th)	0.3007
Indiana (8th)	0.3642	*Average*	*0.2862*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

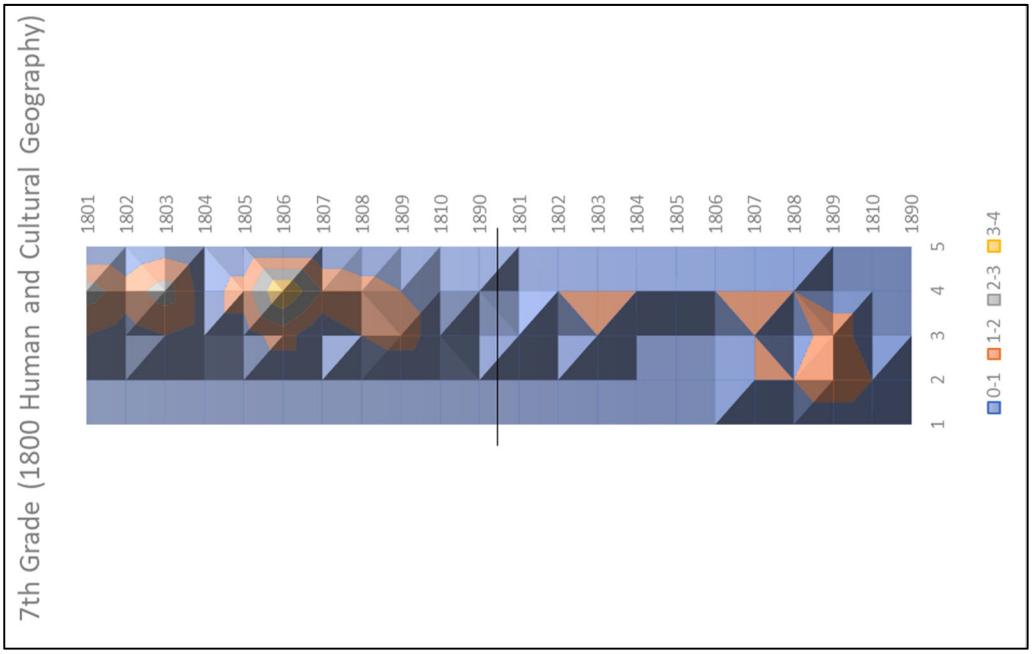


Figure 6.211. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

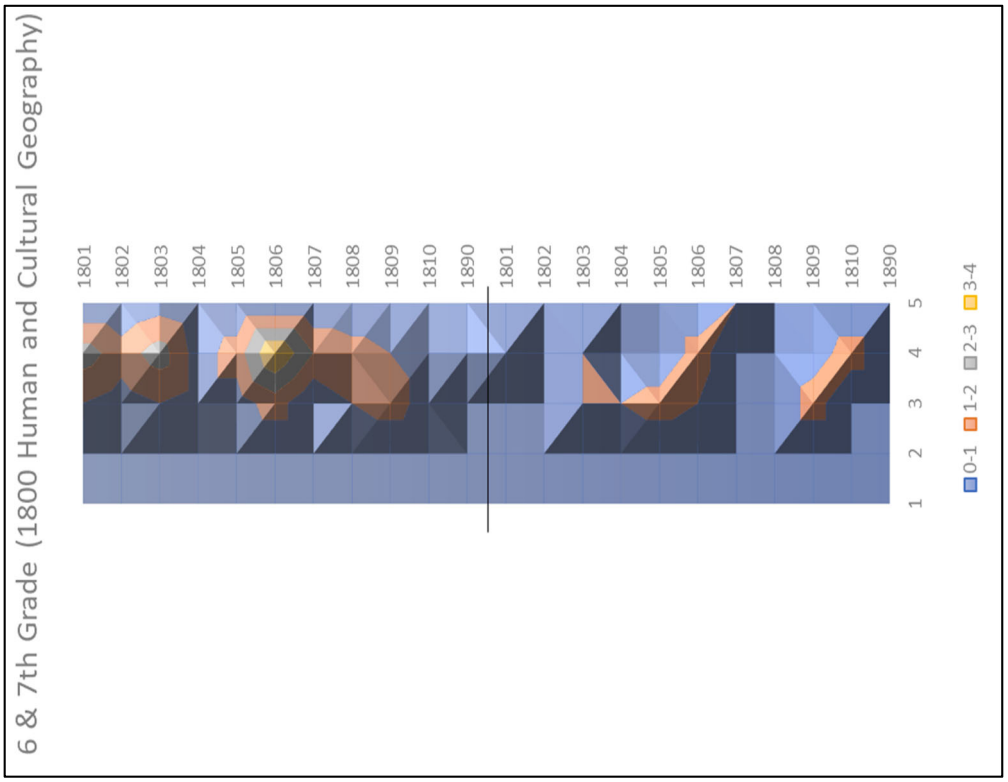


Figure 6.212. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

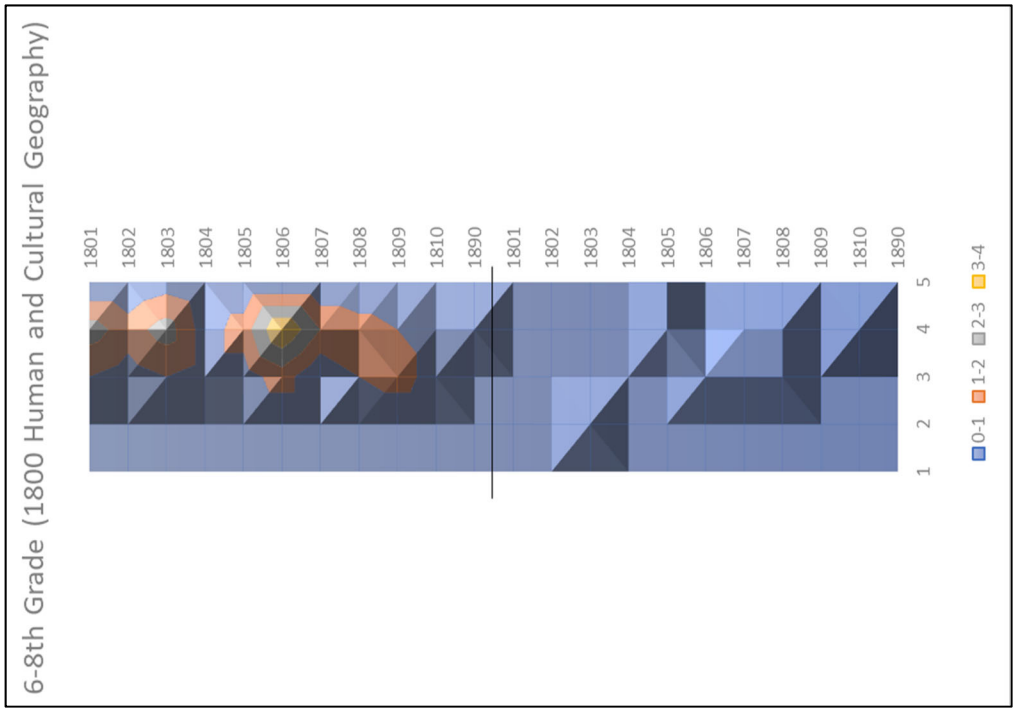


Figure 6.213. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

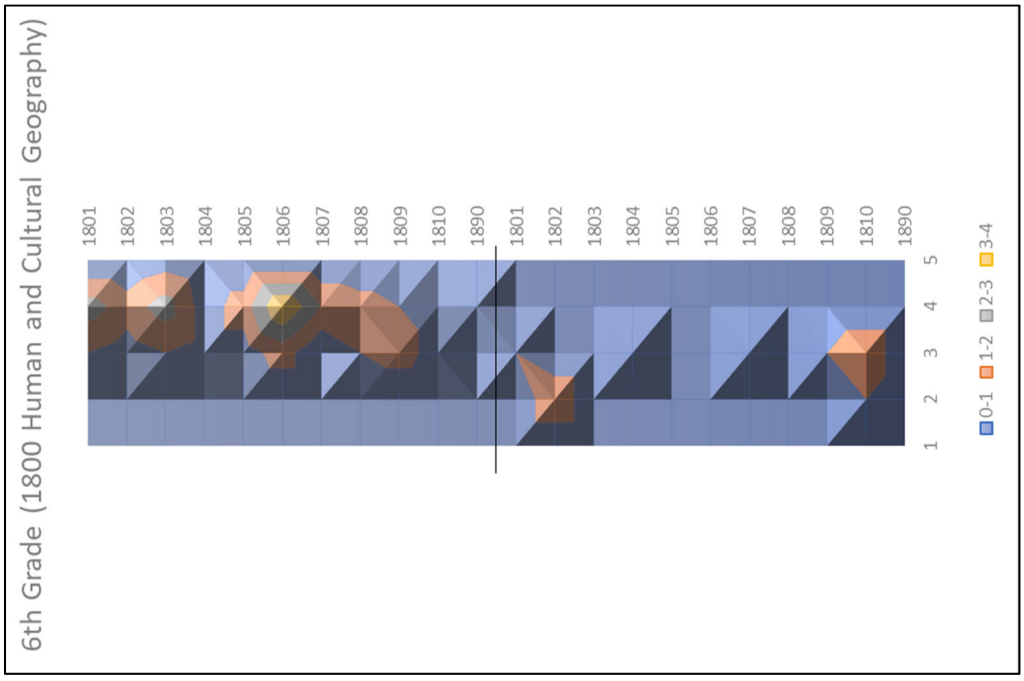


Figure 6.214. Geography Curriculum Correspondence between National Geography Standards and Florida (6th grade) Social Studies Standards

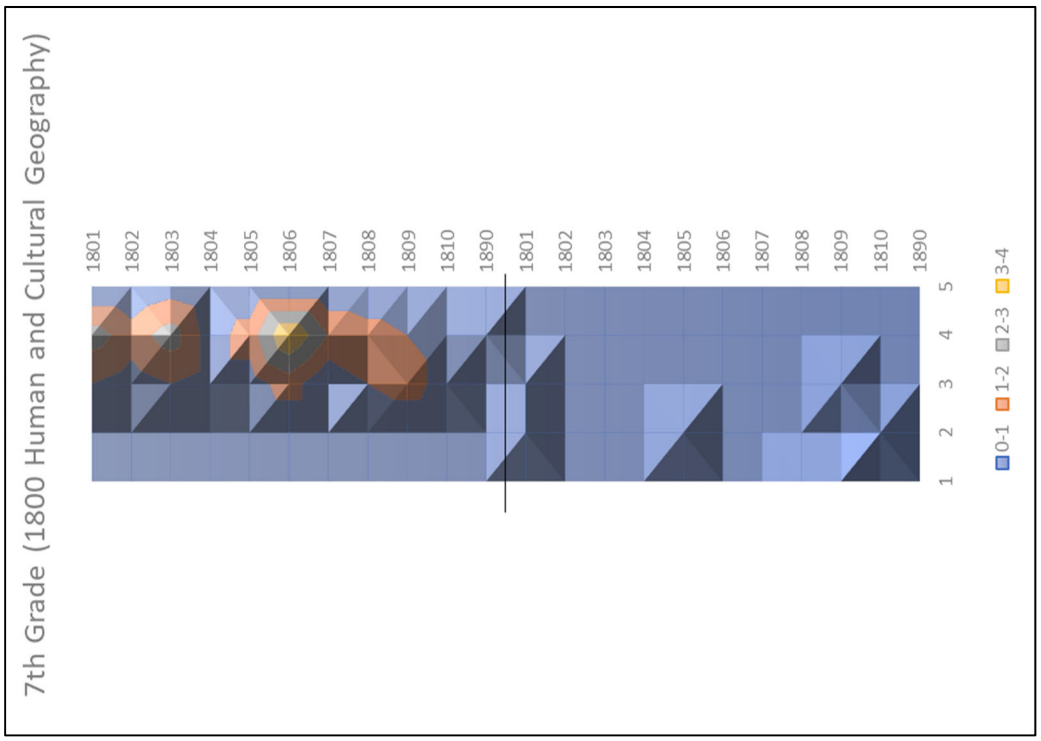


Figure 6.215. Geography Curriculum Correspondence between National Geography Standards and Florida (7th grade) Social Studies Standards

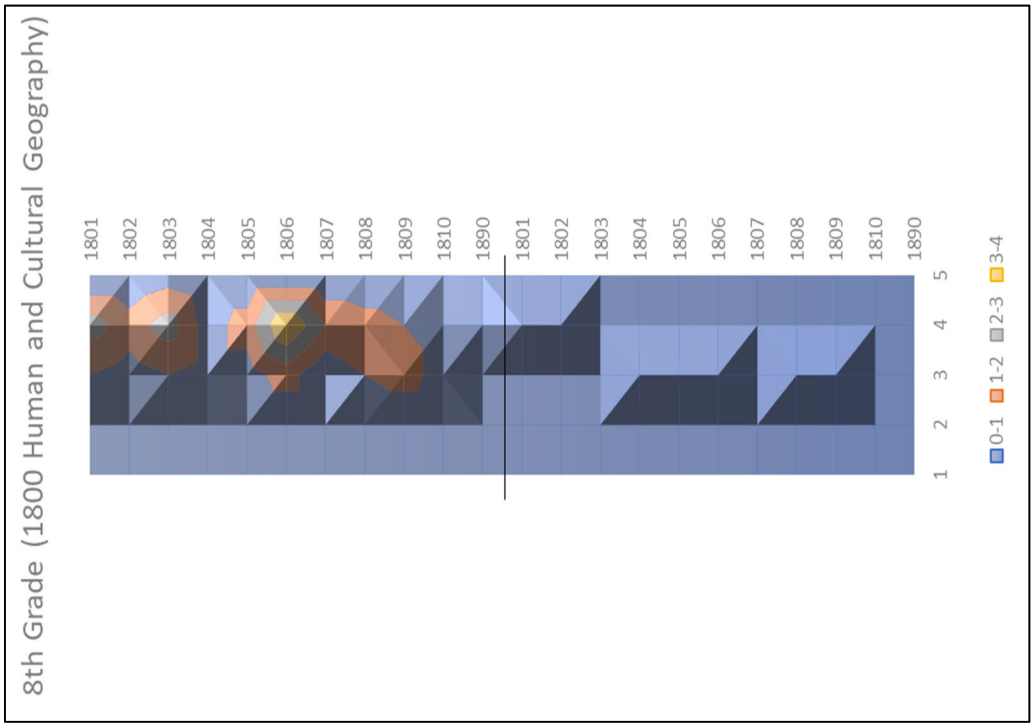


Figure 6.216. Geography Curriculum Correspondence between National Geography Standards and Florida (8th grade) Social Studies Standards

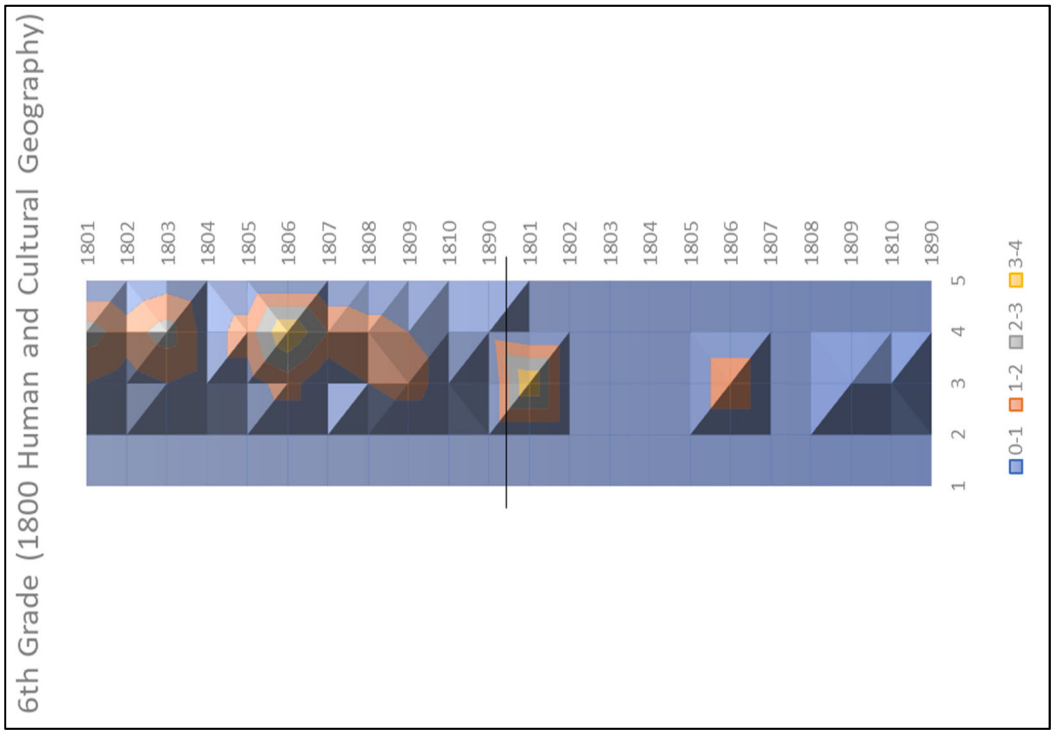


Figure 6.217. Geography Curriculum Correspondence between National Geography Standards and Georgia (6th grade) Social Studies Standards

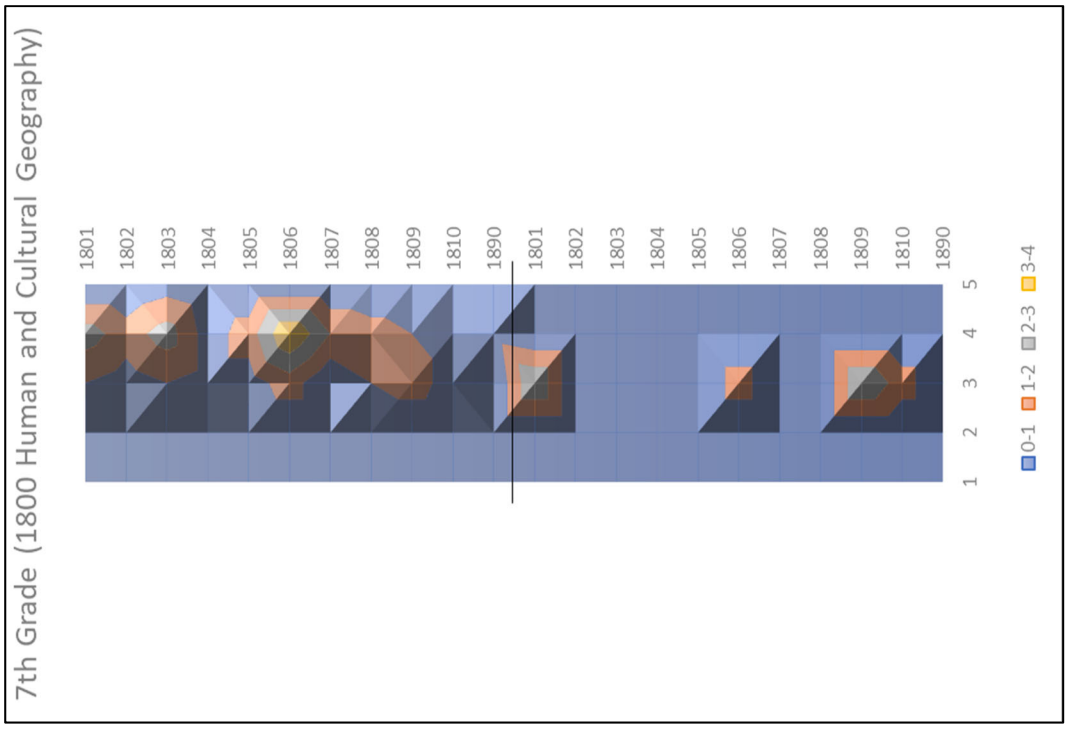


Figure 6.218. Geography Curriculum Correspondence between National Geography Standards and Georgia (7th grade) Social Studies Standards

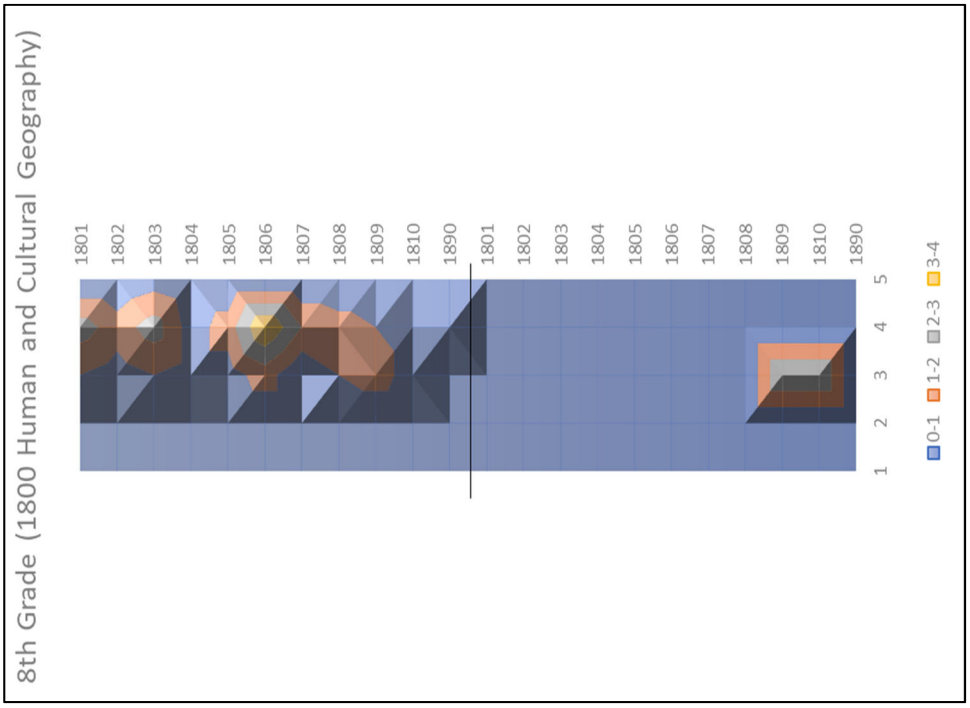


Figure 6.219. Geography Curriculum Correspondence between National Geography Standards and Georgia (8th grade) Social Studies Standards

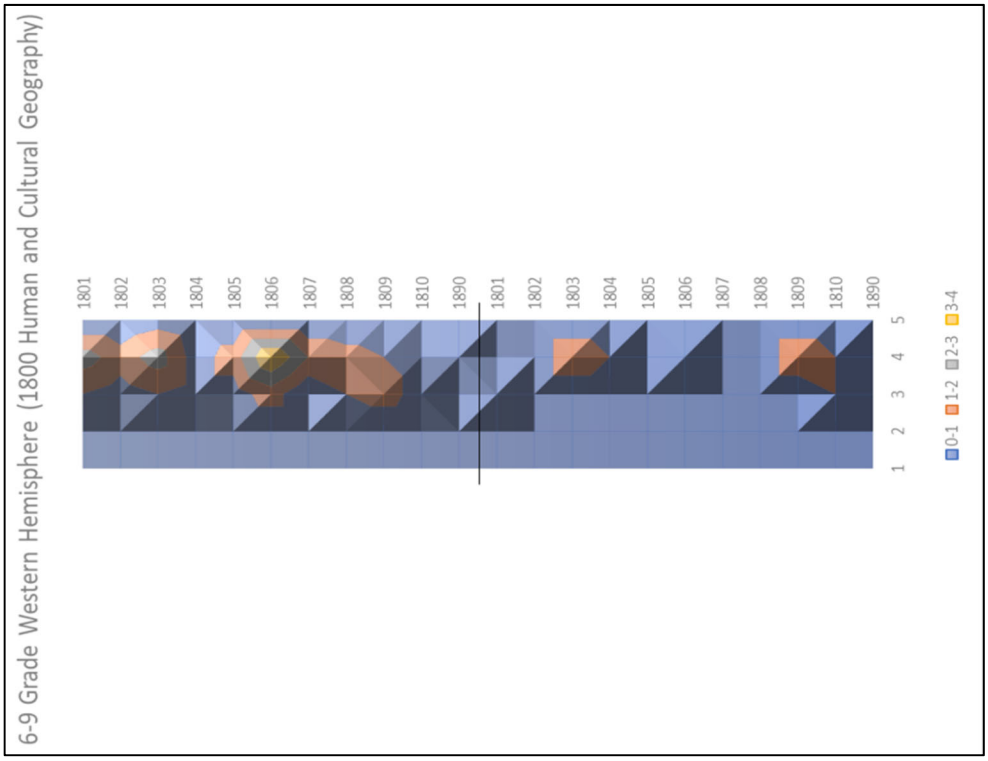


Figure 6.220. Geography Curriculum Correspondence between National Geography Standards and Idaho (western) Social Studies Standards

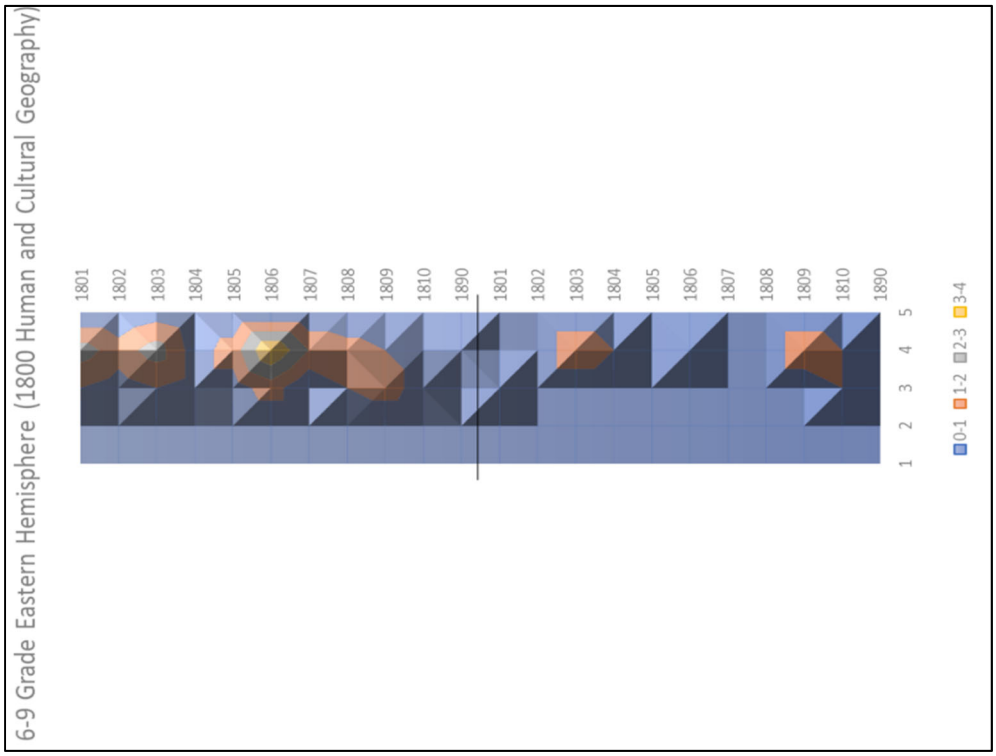


Figure 6.221. Geography Curriculum Correspondence between National Geography Standards and Idaho (eastern) Social Studies Standards

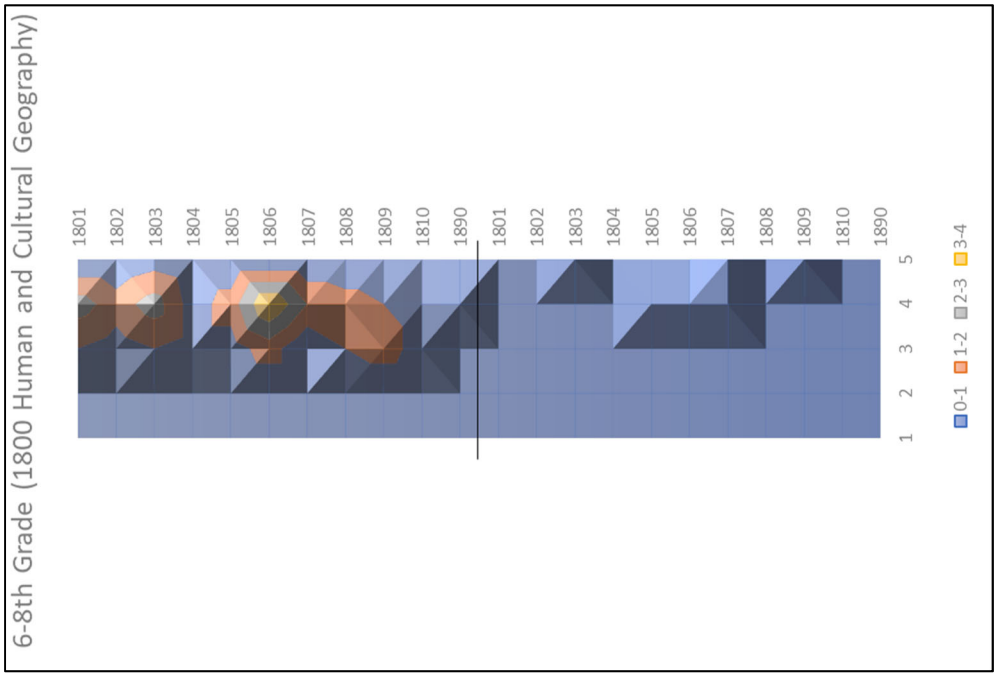


Figure 6.222. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

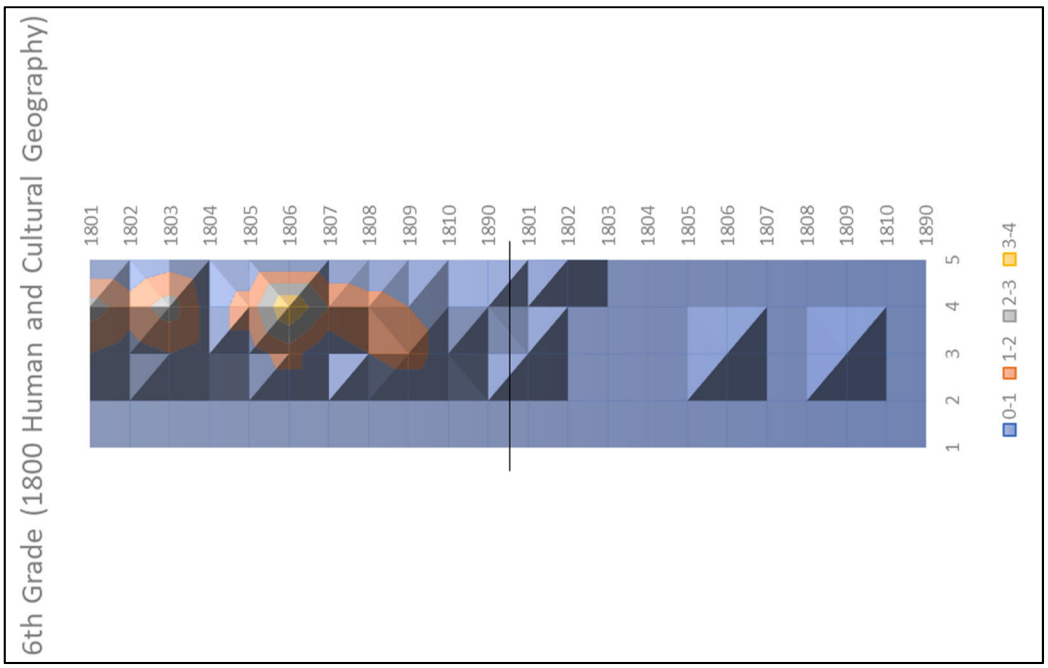


Figure 6.223. Geography Curriculum Correspondence between National Geography Standards and Indiana (6th grade) Social Studies Standards

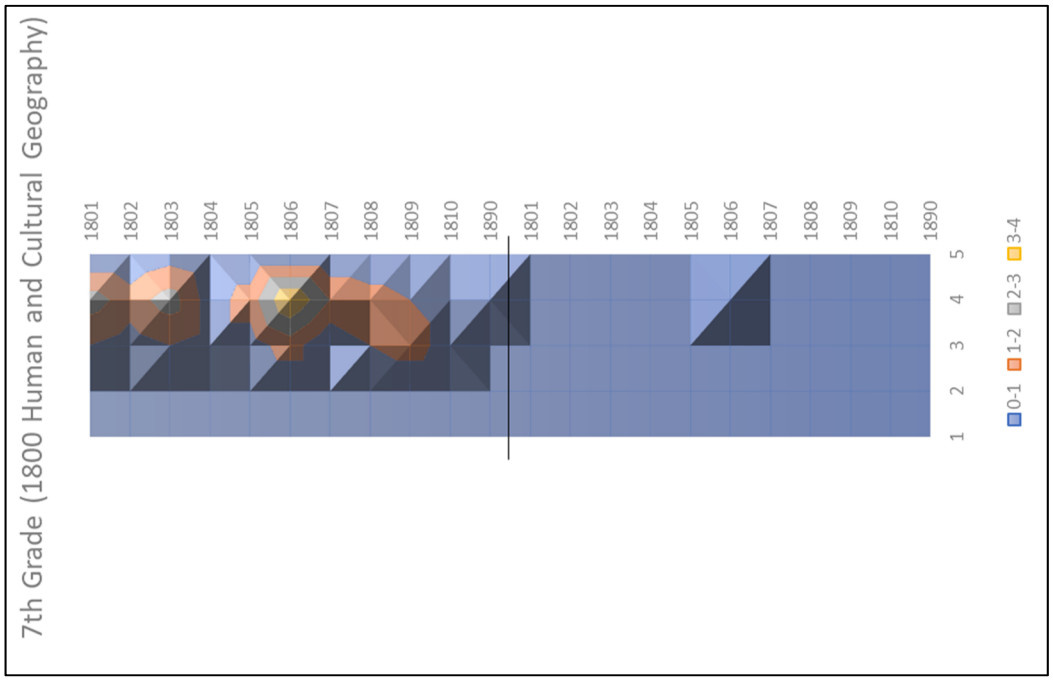


Figure 6.224. Geography Curriculum Correspondence between National Geography Standards and Indiana (7th grade) Social Studies Standards

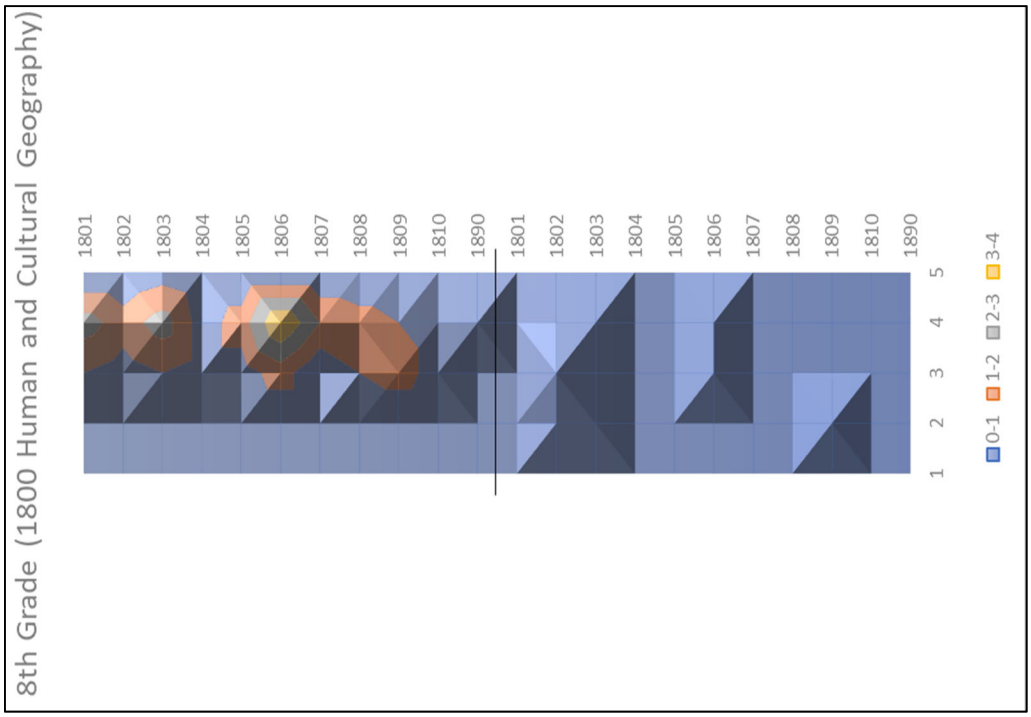


Figure 6.225. Geography Curriculum Correspondence between National Geography Standards and Indiana (8th grade) Social Studies Standards

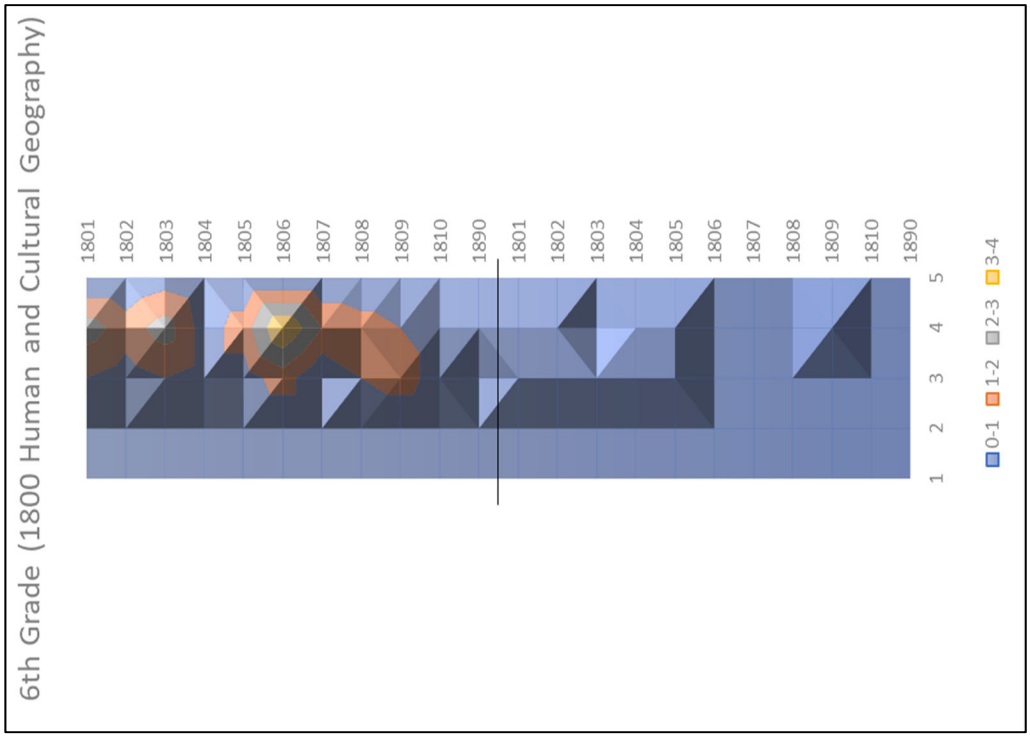


Figure 6.226. Geography Curriculum Correspondence between National Geography Standards and Iowa (6th grade) Social Studies Standards

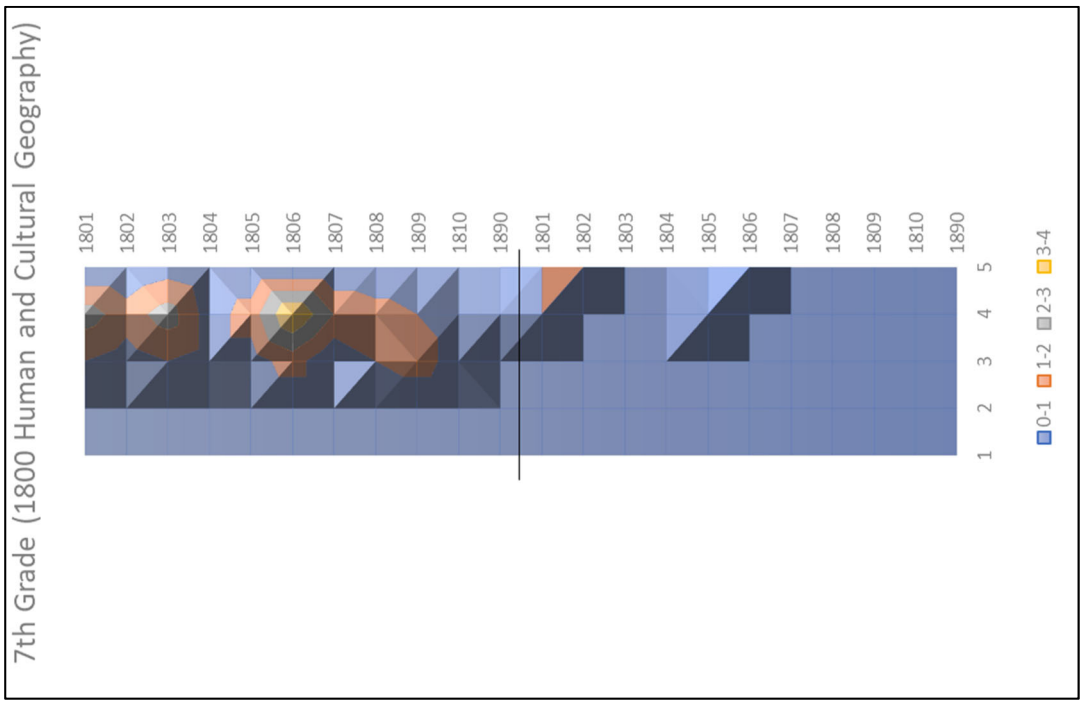


Figure 6.227. Geography Curriculum Correspondence between National Geography Standards and Iowa (7th grade) Social Studies Standards

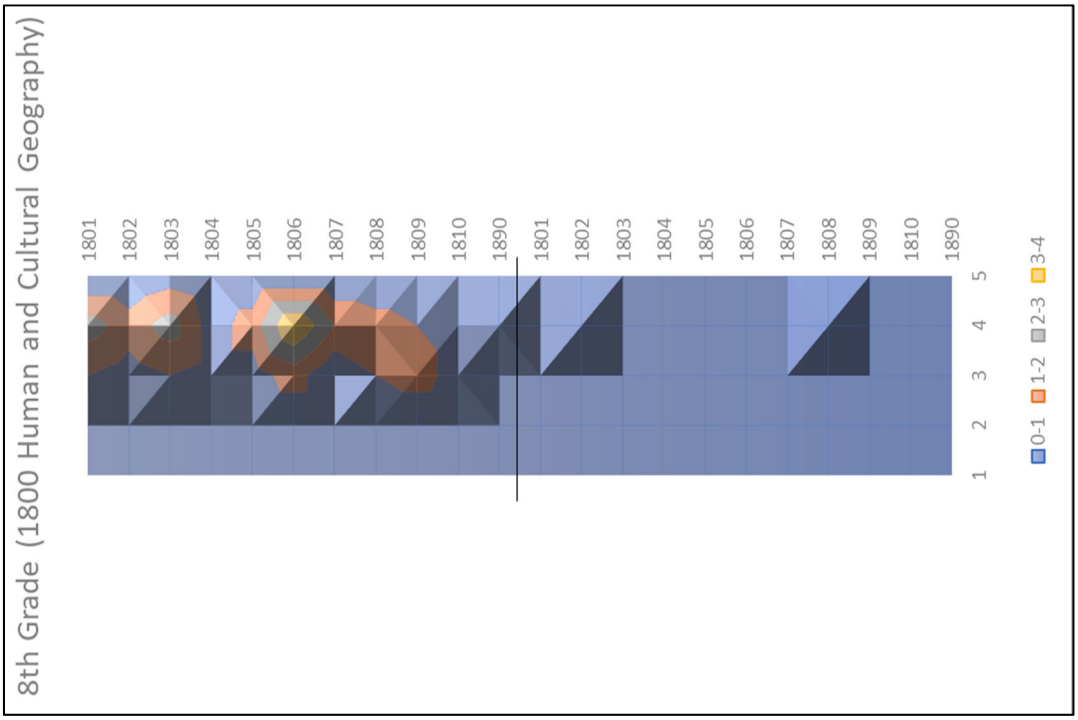


Figure 6.228. Geography Curriculum Correspondence between National Geography Standards and Iowa (8th grade) Social Studies Standards

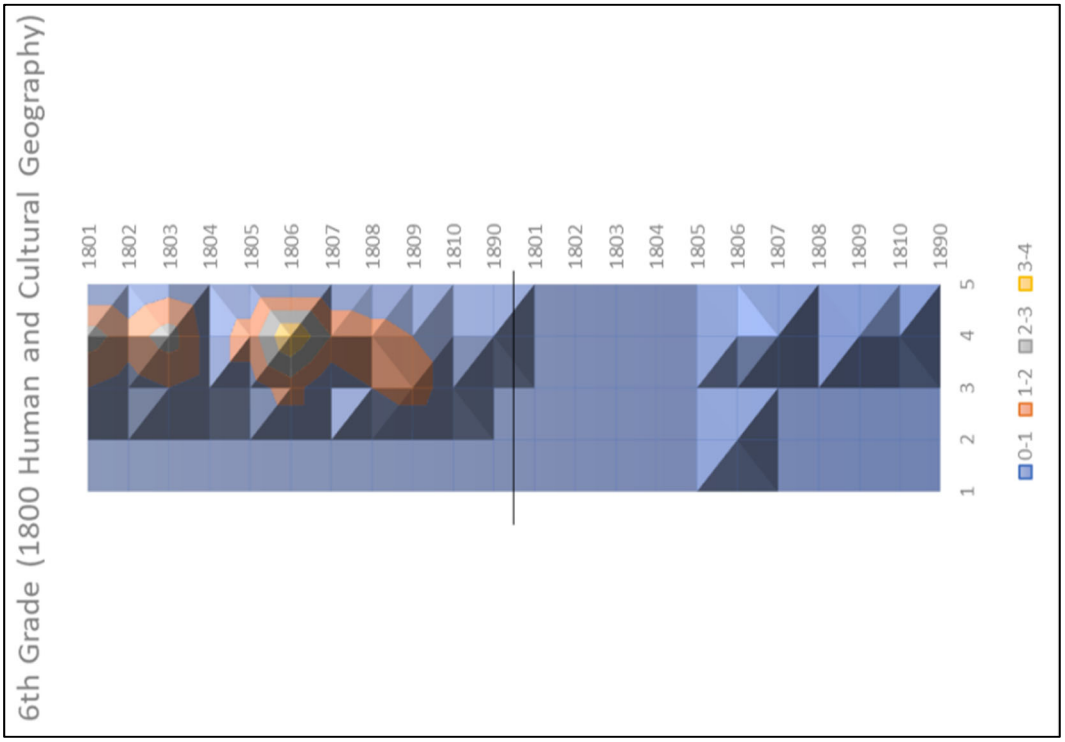


Figure 6.229. Geography Curriculum Correspondence between National Geography Standards and Kentucky (6th grade) Social Studies Standards

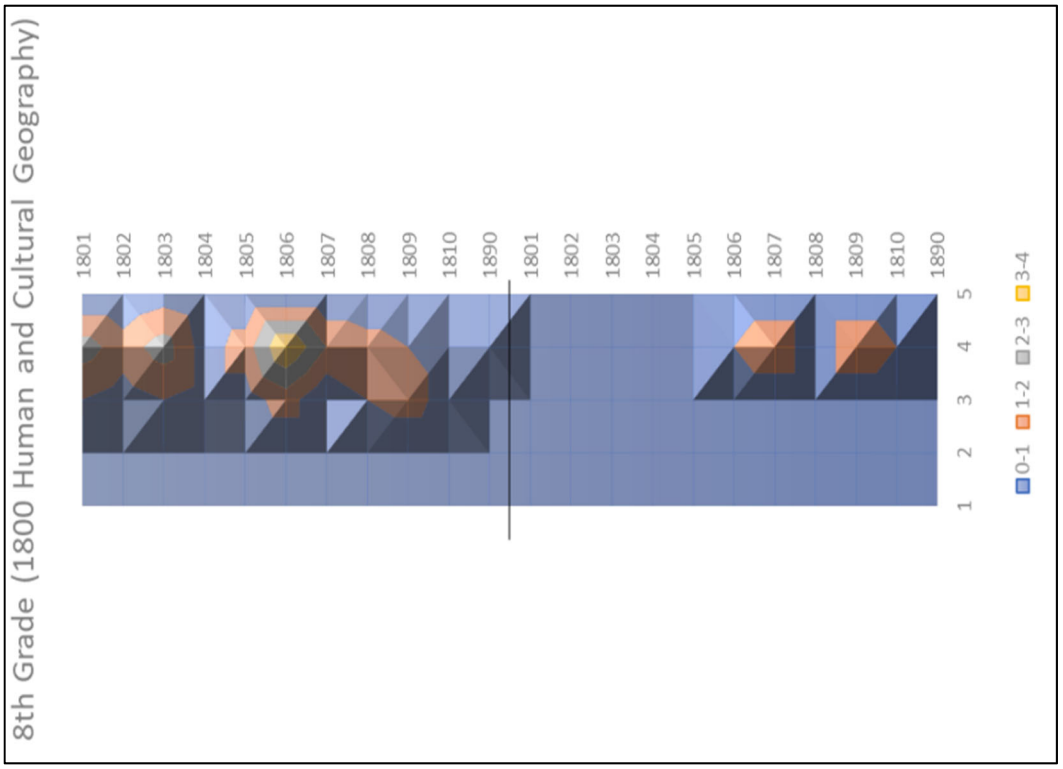


Figure 6.230. Geography Curriculum Correspondence between National Geography Standards and Kentucky (8th grade) Social Studies Standards

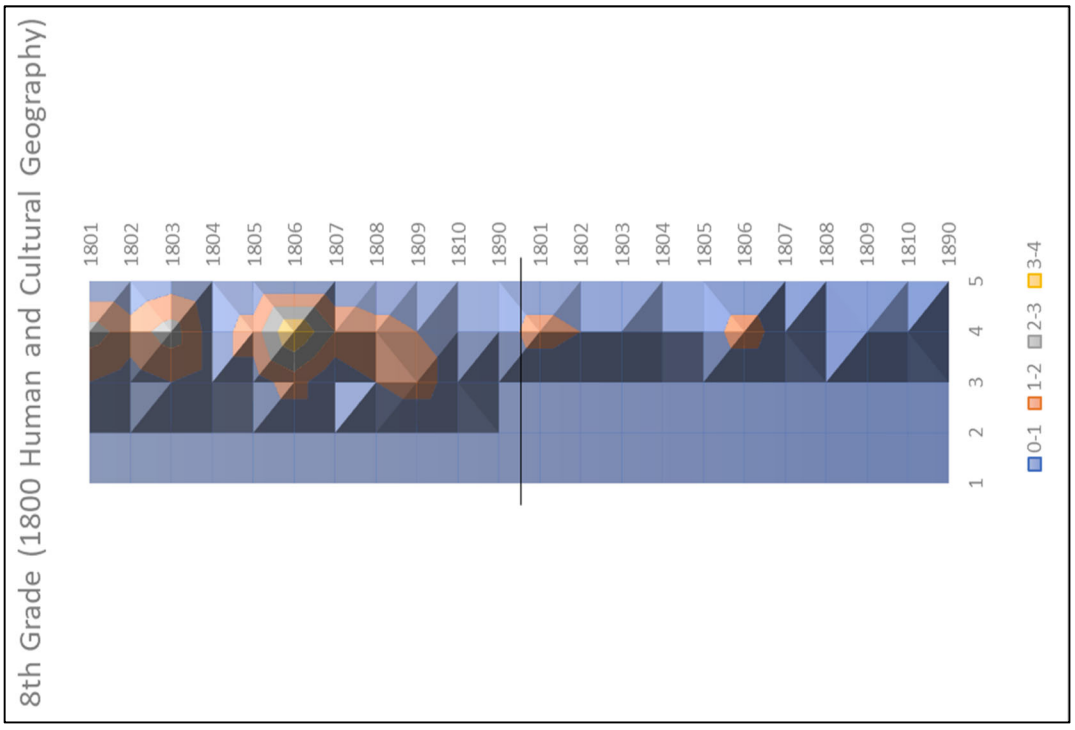


Figure 6.231. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

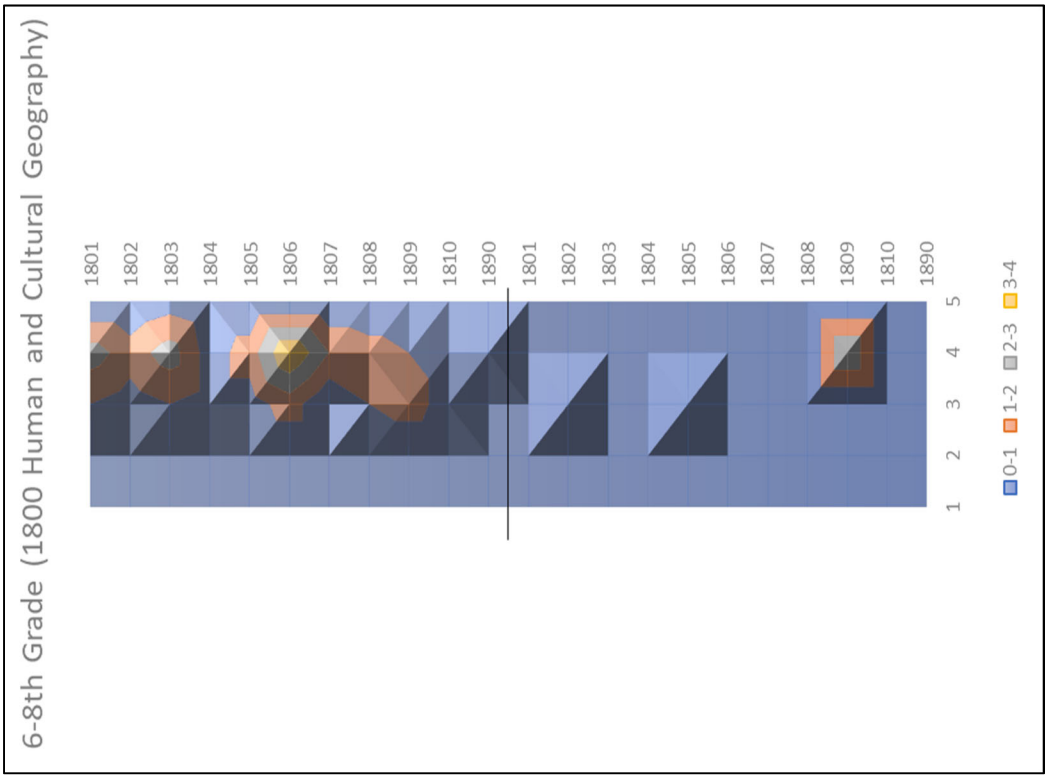


Figure 6.232. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

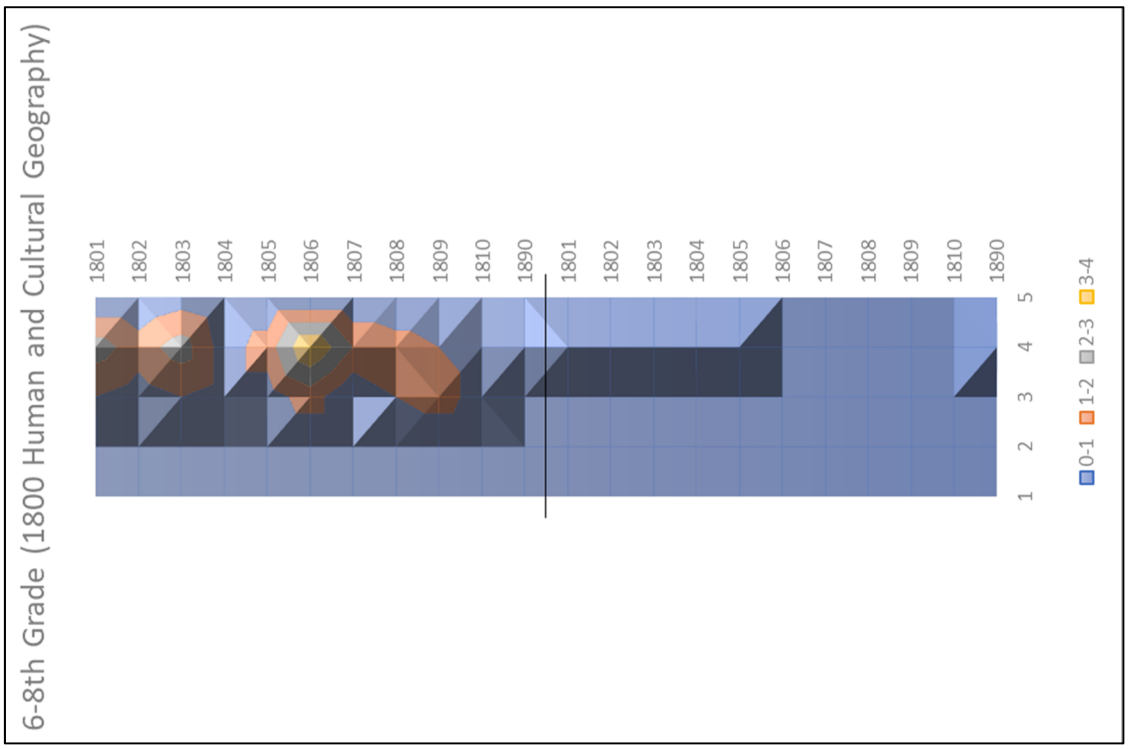


Figure 6.233. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

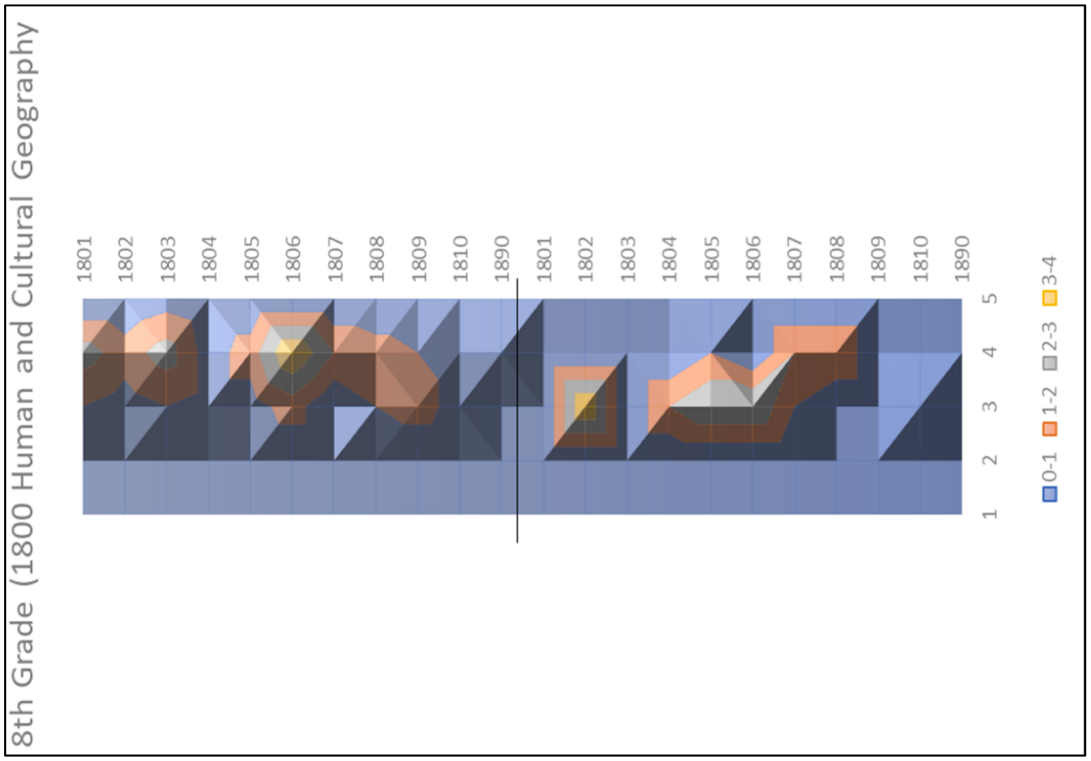


Figure 6.234. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

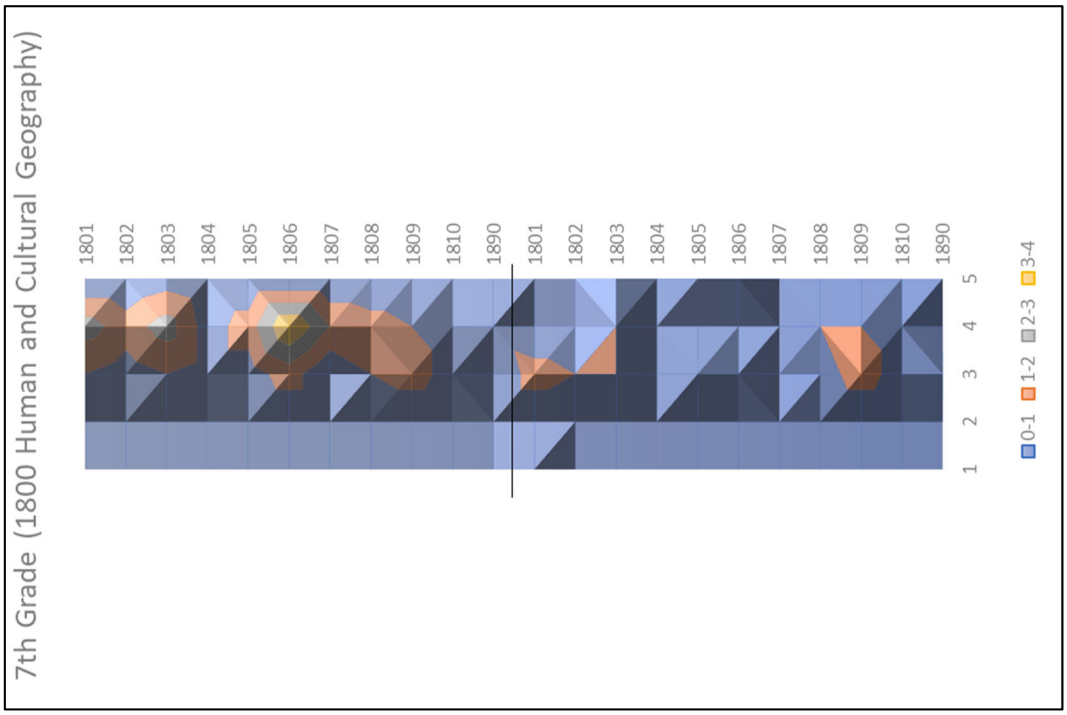


Figure 6.235. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

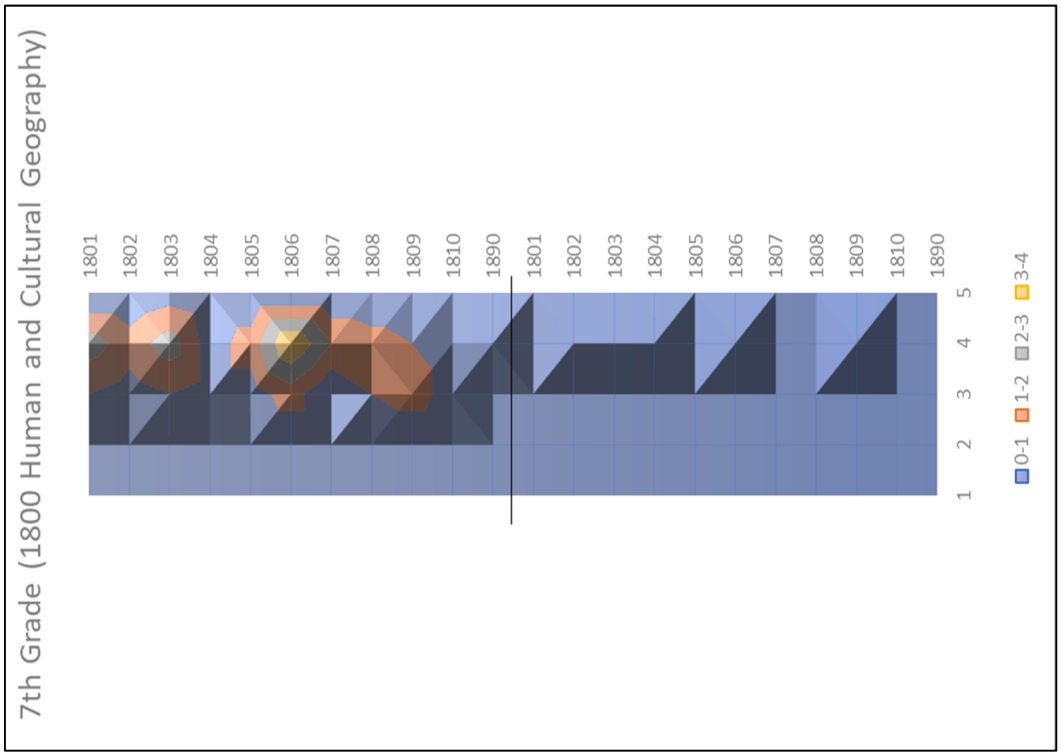


Figure 6.236. Geography Curriculum Correspondence between National Geography Standards and Utah Social Studies Standards

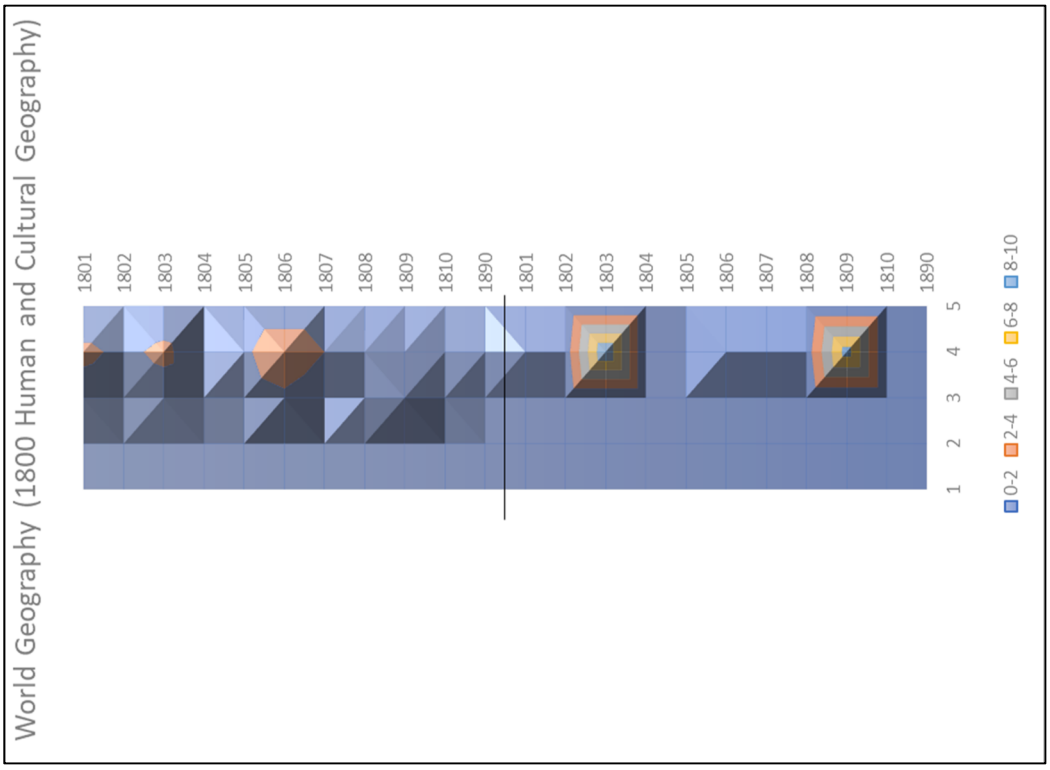


Figure 6.237. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

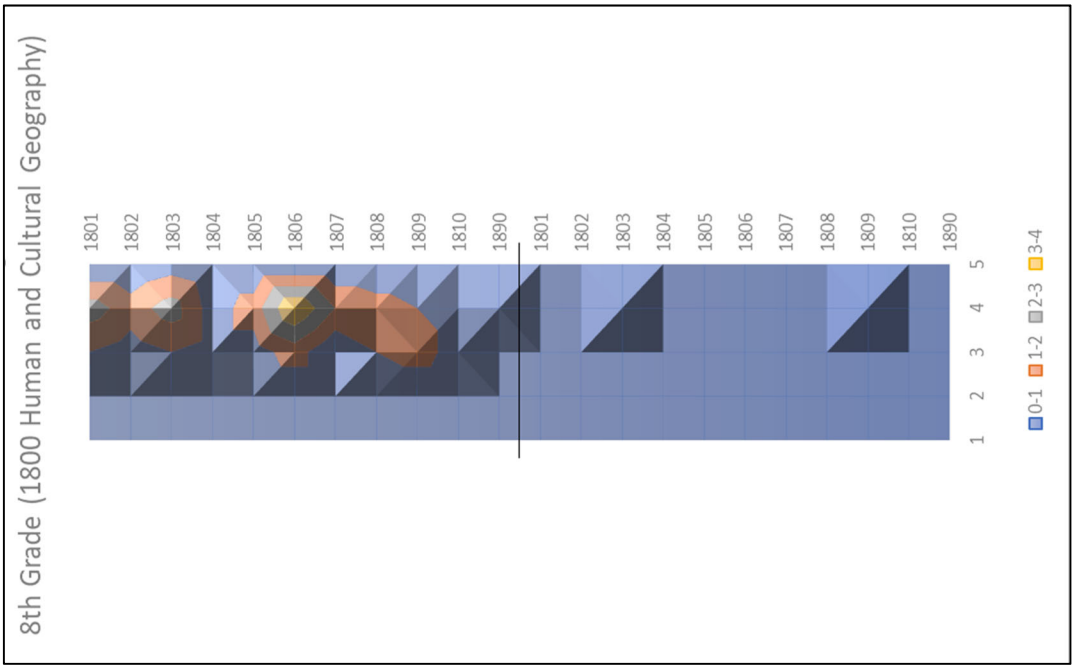


Figure 6.238. Geography Curriculum Correspondence between National Geography Standards and West Virginia Social Studies Standards

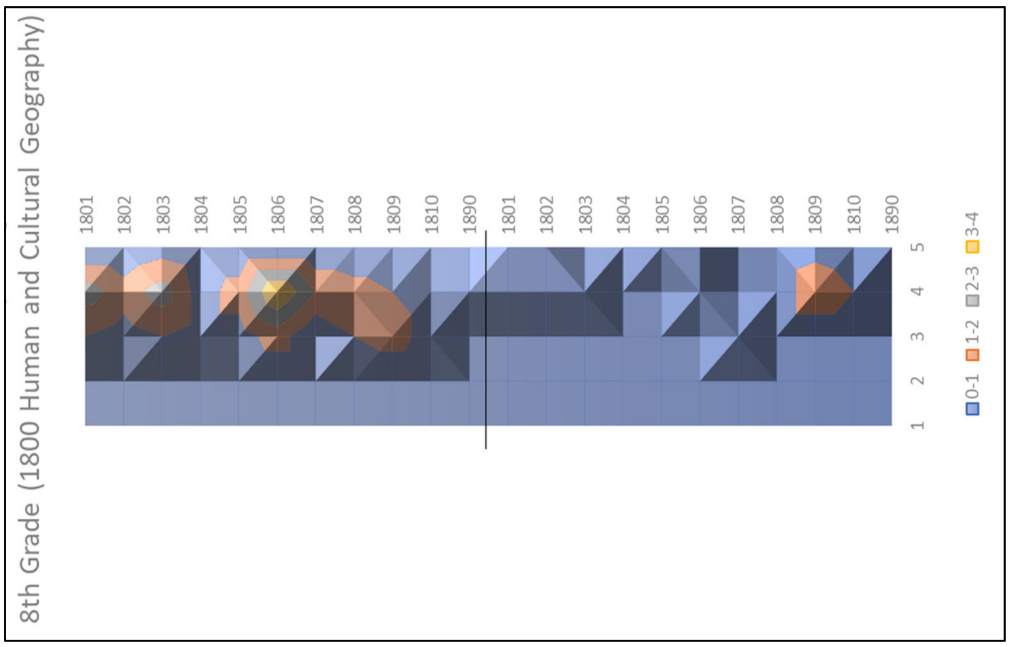


Figure 6.239. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 8 Inclusion of Human/Environment Interactions (1900)

Human/Environment Interactions was another major focus of the grade 6-8 standards, as compared to grade 4. The average alignment as shown in Table 6.14 was 0.3006 with a range from 0.0645 (West Virginia) to 0.6331 (Arkansas 7th grade). Georgia and Iowa did not include standards in 8th grade, but they were included in grade 6 and 7 for both states. State standards set high student expectations for these topic areas, aligned with the performance standards written in *Geography for Life* (2012). Human modification of, and adaption to the physical environment (1901) was the one topic that reoccurs in each state in terms of human/environment interactions. Other states delve into resources and energy use (1903), pollution and environmental problems (1904), and natural hazards and disasters (1905), as seen in Figures 6.240 – 6.268.

Table 6.14. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 8 Benchmark for Human/Environment Interactions

State	1900 Human/ Environment Interactions
Arkansas (7th)	0.6331
Connecticut (6 & 7)	0.4135
Delaware (6-8)	0.1290
Florida (6th)	0.1290
Florida (7th)	0.0968
Florida (8th)	0.3548
Georgia (6th)	0.2903
Georgia (7th)	0.2903
Georgia (8th)	NA
Idaho (6-9 west)	0.4194
Idaho (6-9 east)	0.4194
Illinois (6-8)	0.2903
Indiana (6th)	0.3548
Indiana (7th)	0.1935
Indiana (8th)	0.4839
Iowa (6th)	0.4194
Iowa (7th)	0.2903
Iowa (8th)	NA
Kentucky (6th)	0.3613
Kentucky (8th)	0.2581
Maryland (8th)	0.4435
Missouri (6-8)	0.1290
Nevada (6-8)	0.2581
New Jersey (8th)	0.3935
South Dakota (7th)	0.1613
Utah (7th)	0.1290
Virginia (World Geo)	0.3548
West Virginia (8th)	0.0645
Wyoming (8th)	0.3548
Average	*0.3006*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

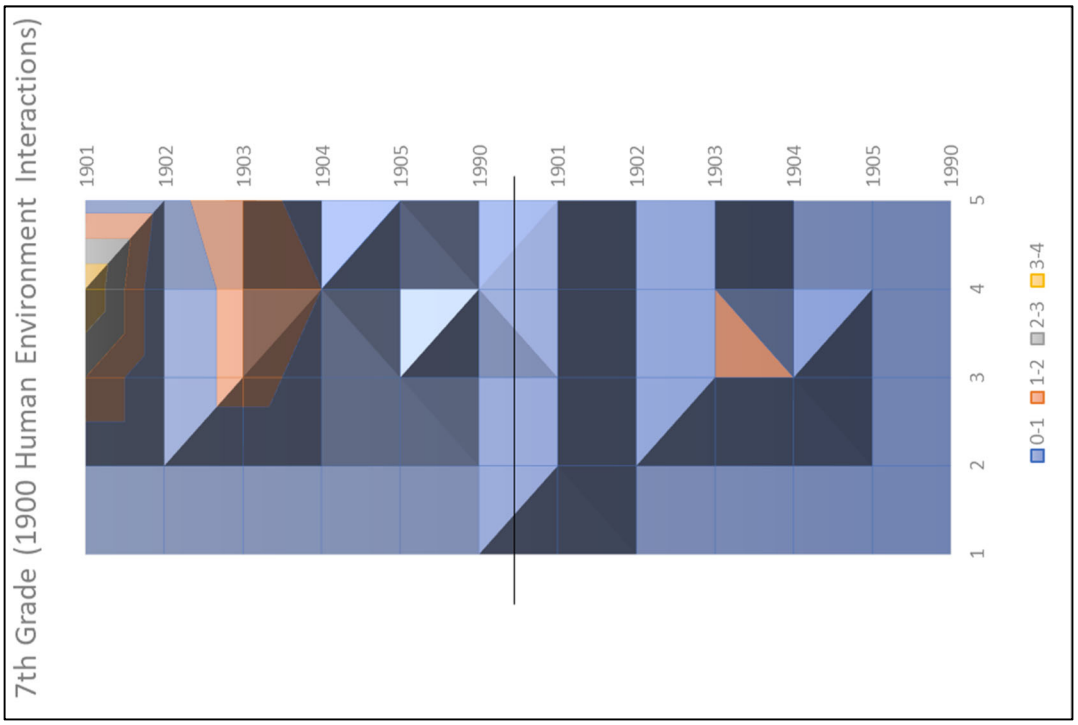


Figure 6.240. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

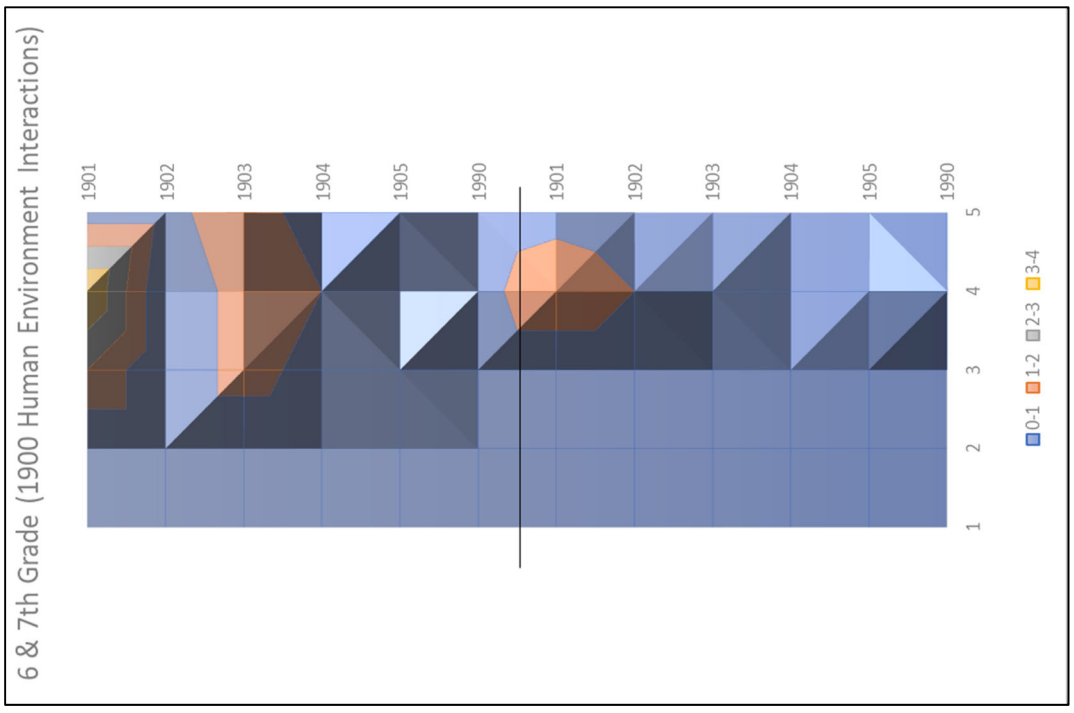


Figure 6.241. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

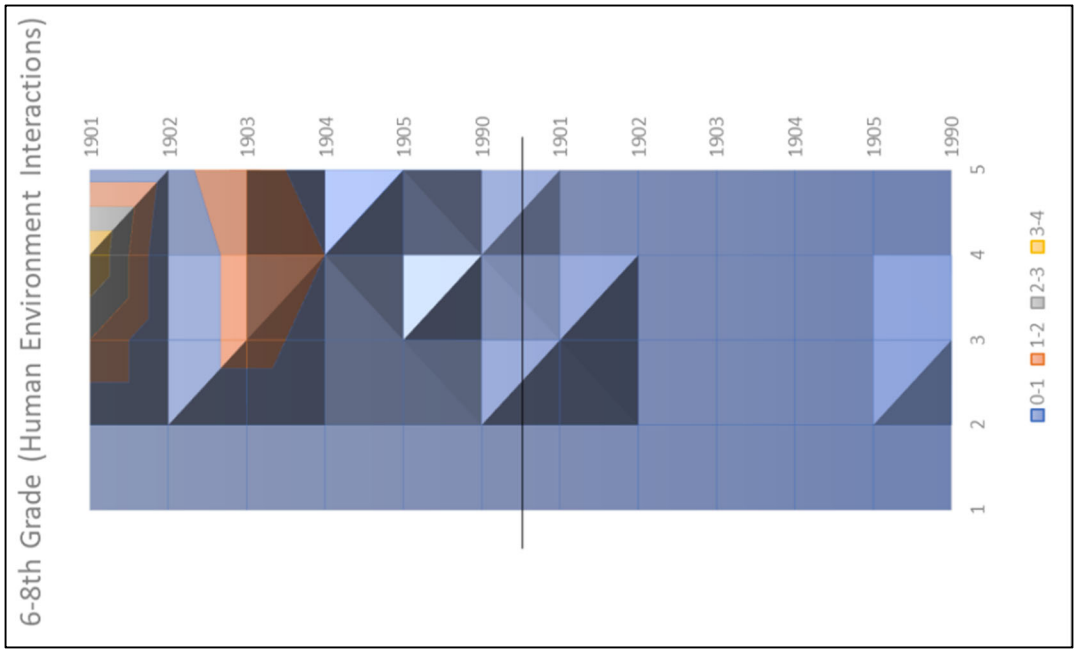


Figure 6.242. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

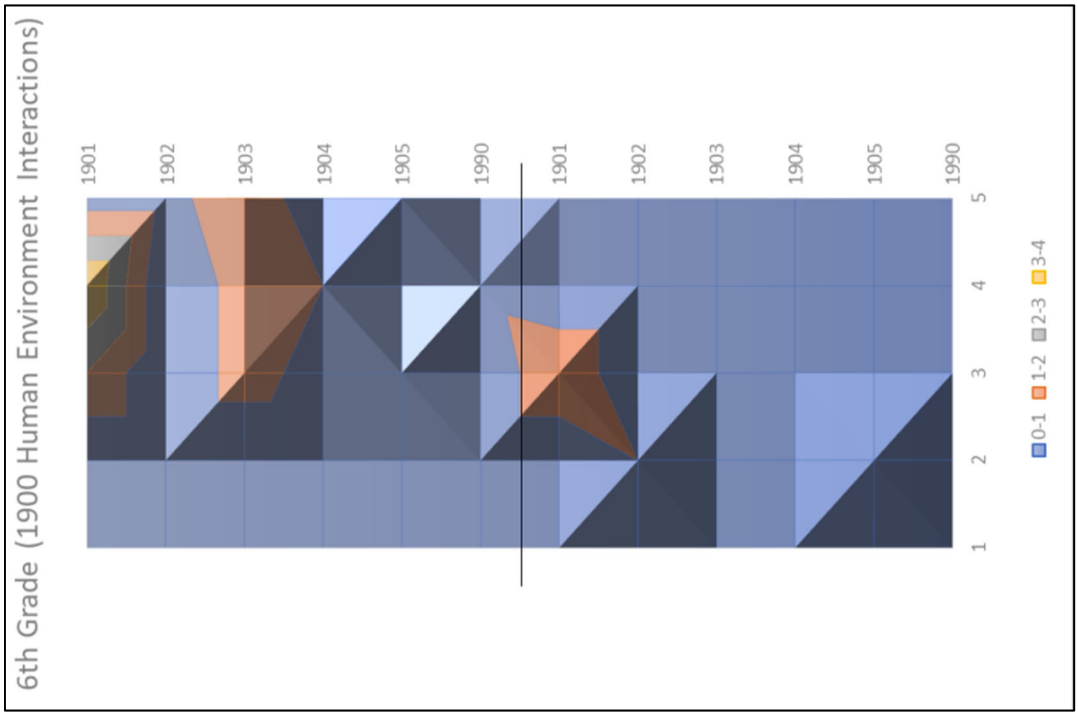


Figure 6.243. Geography Curriculum Correspondence between National Geography Standards and Florida (6^{th} grade) Social Studies Standards

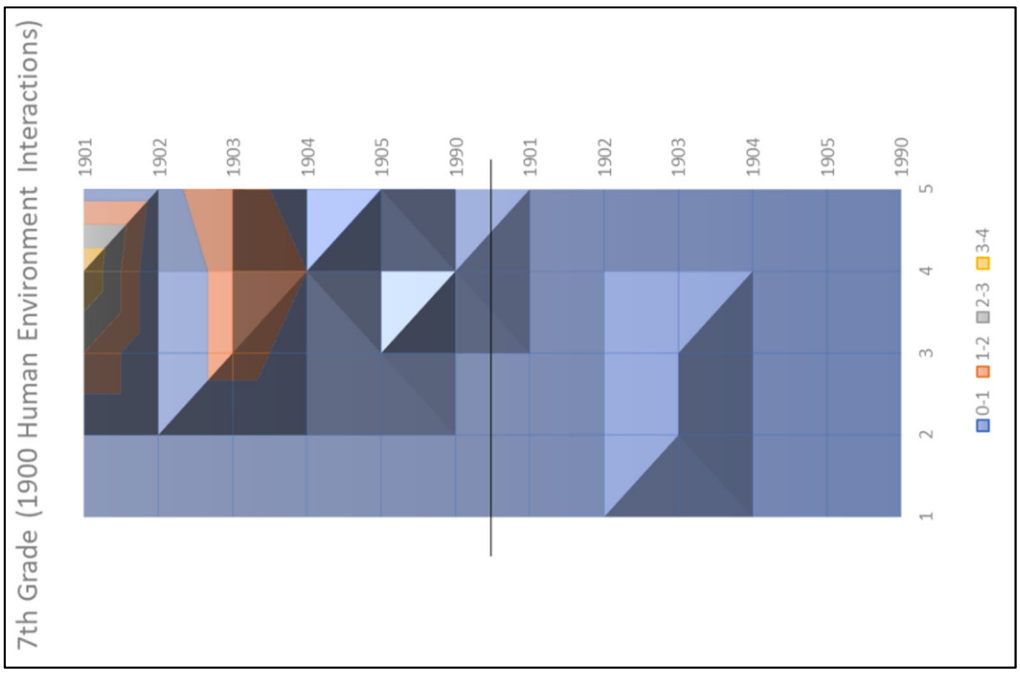


Figure 6.244. Geography Curriculum Correspondence between National Geography Standards and Florida (7th grade) Social Studies Standards

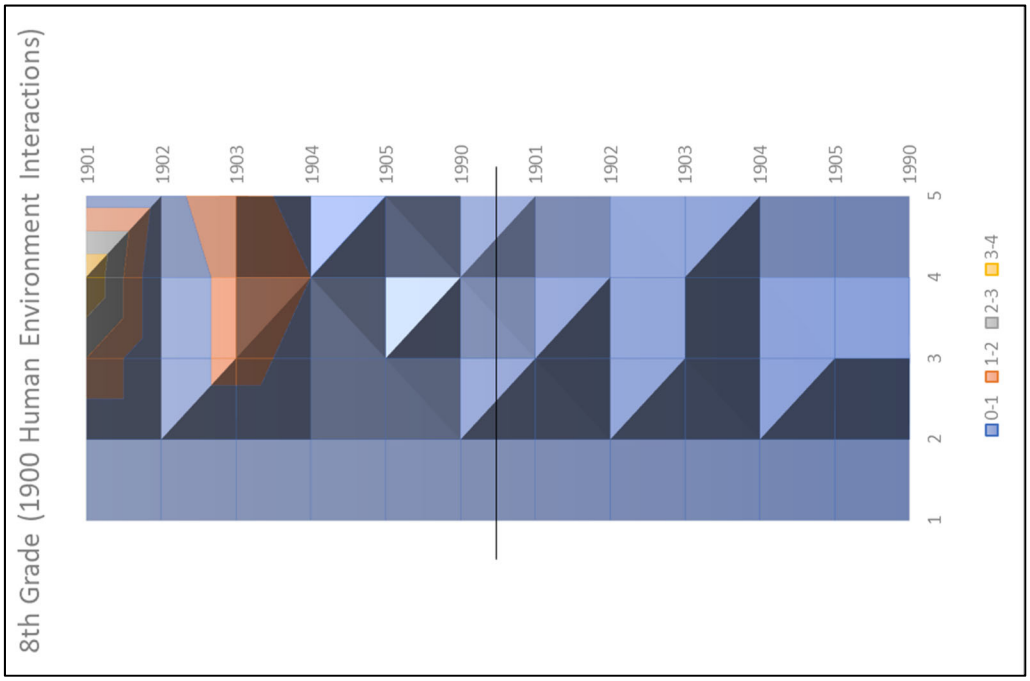


Figure 6.245. Geography Curriculum Correspondence between National Geography Standards and Florida (8th grade) Social Studies Standards

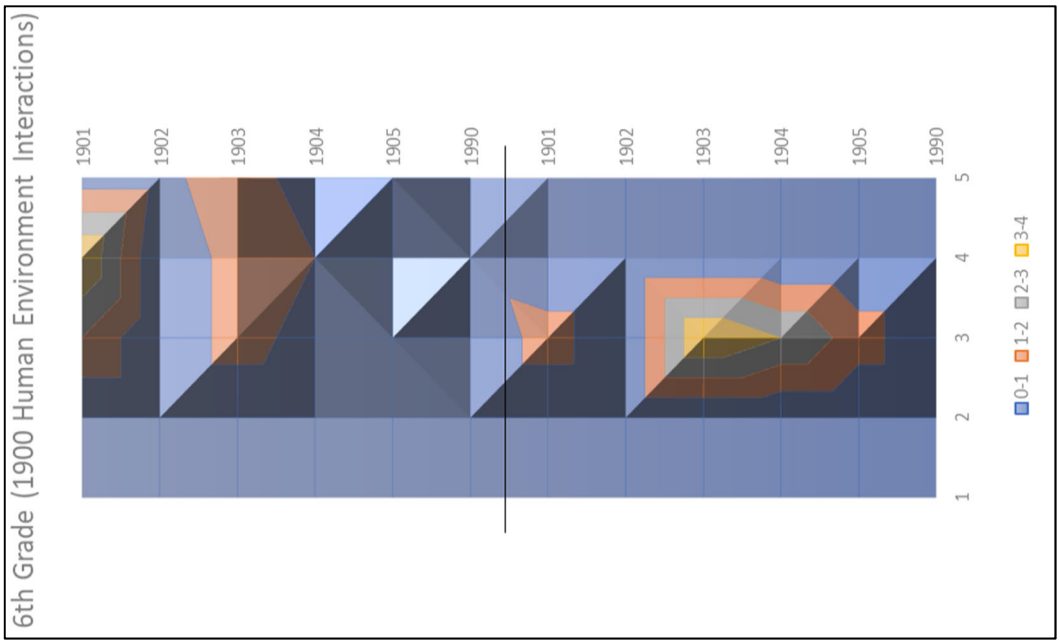


Figure 6.246. Geography Curriculum Correspondence between National Geography Standards and Georgia (6th grade) Social Studies Standards

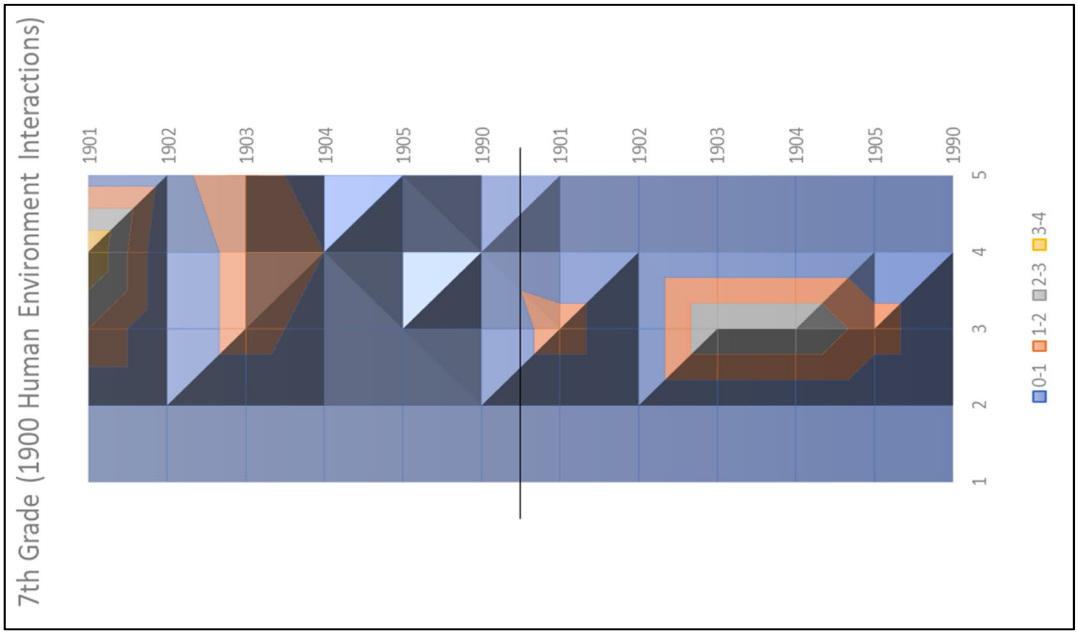


Figure 6.247. Geography Curriculum Correspondence between National Geography Standards and Georgia (7th grade) Social Studies Standards

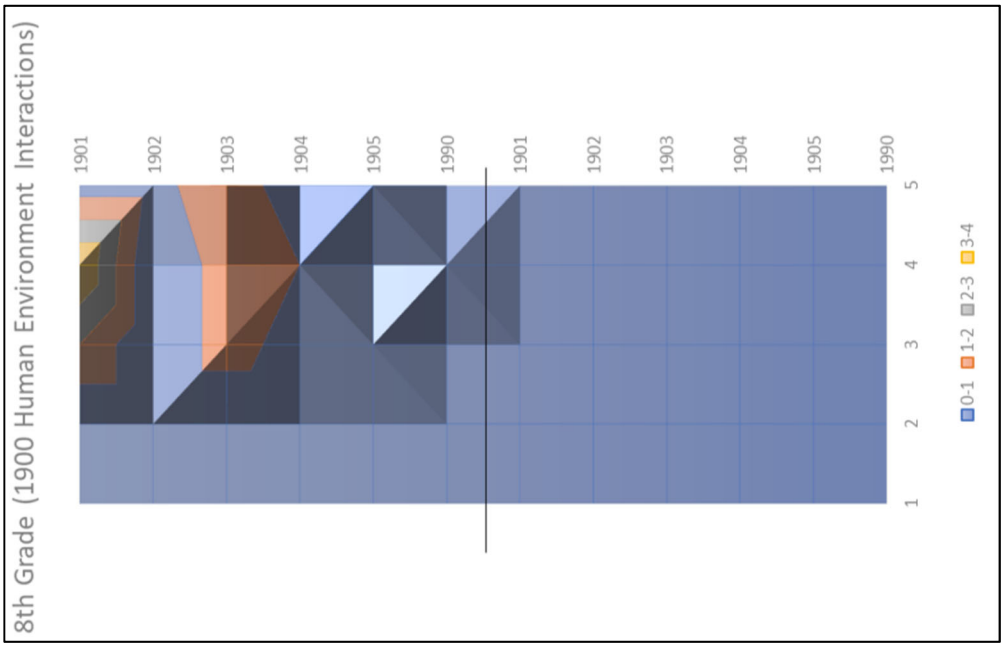


Figure 6.248. Geography Curriculum Correspondence between National Geography Standards and Georgia (8th grade) Social Studies Standards

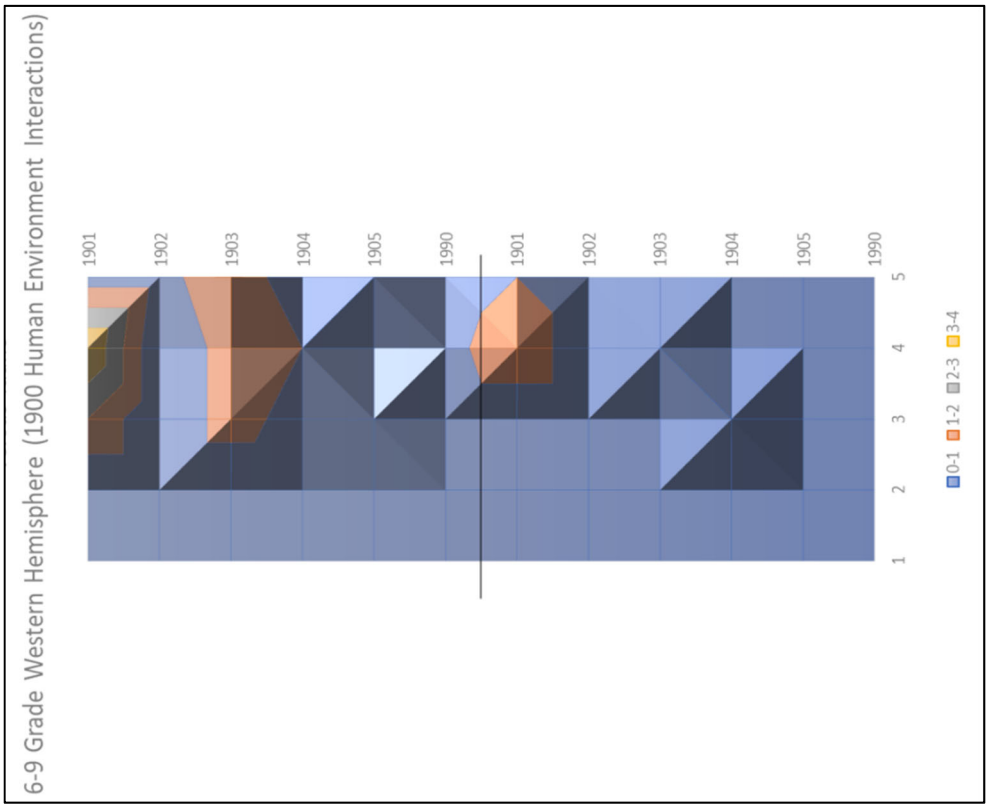


Figure 6.249. Geography Curriculum Correspondence between National Geography Standards and Idaho (western) Social Studies Standards

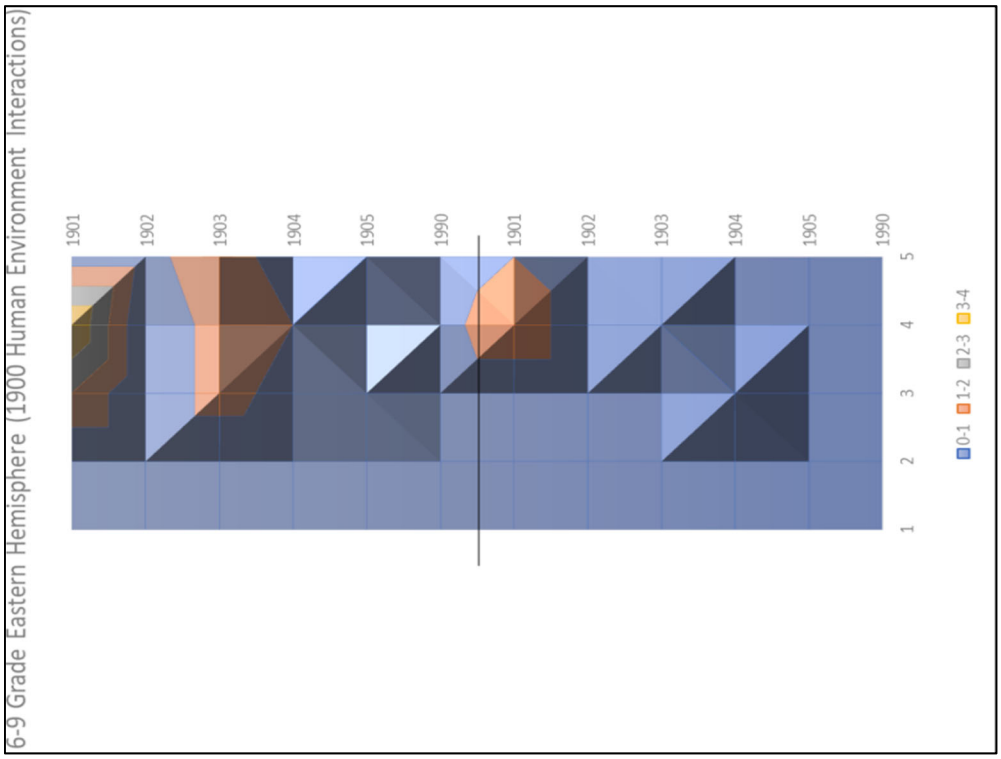


Figure 6.250. Geography Curriculum Correspondence between National Geography Standards and Idaho (eastern) Social Studies Standards

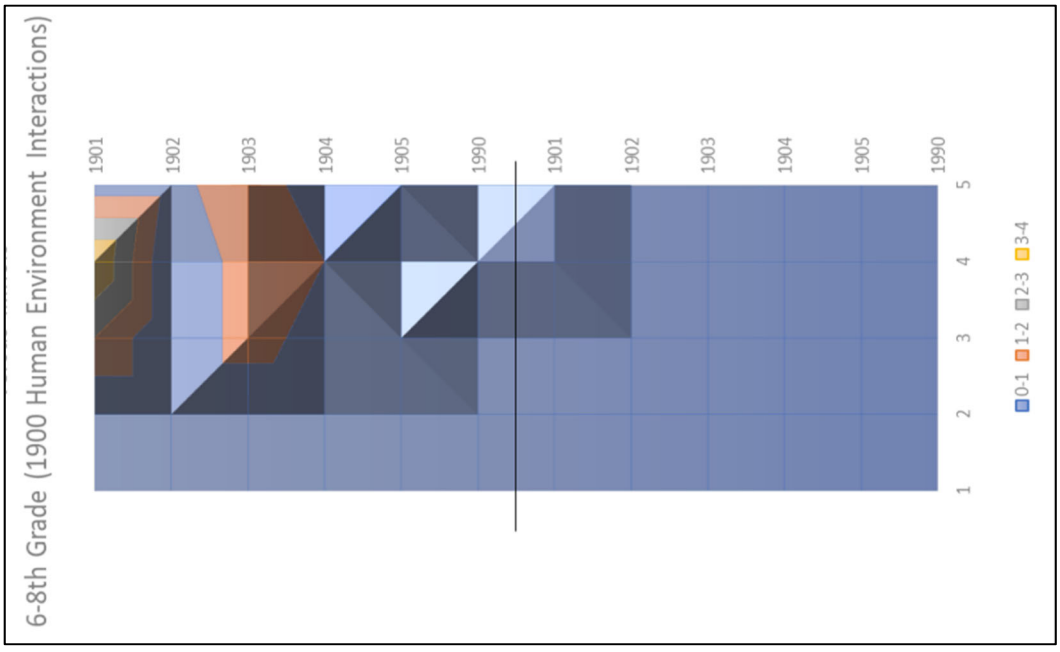


Figure 6.251. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

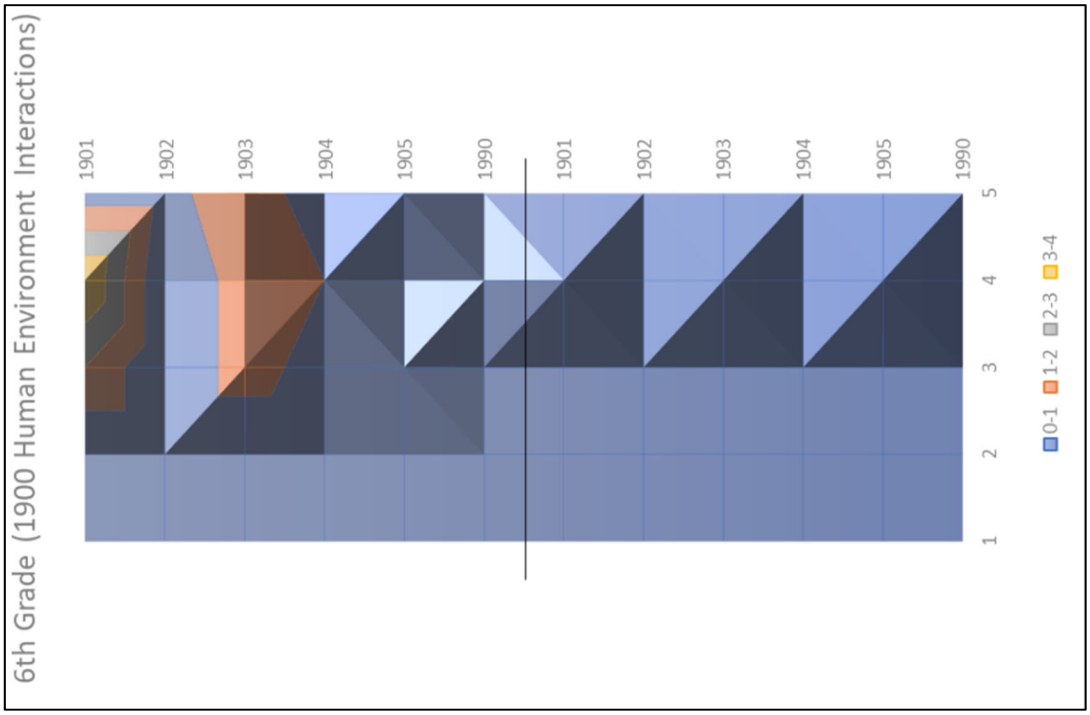


Figure 6.252. Geography Curriculum Correspondence between National Geography Standards and Indiana (6th grade) Social Studies Standards

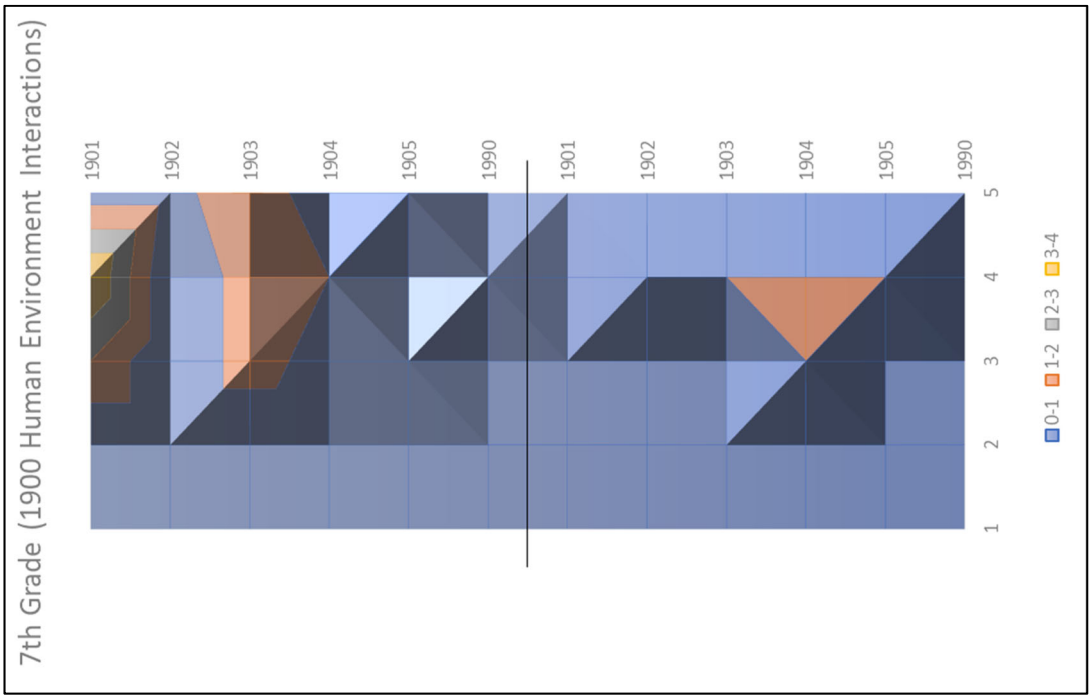


Figure 6.253. Geography Curriculum Correspondence between National Geography Standards and Indiana (7th grade) Social Studies Standards

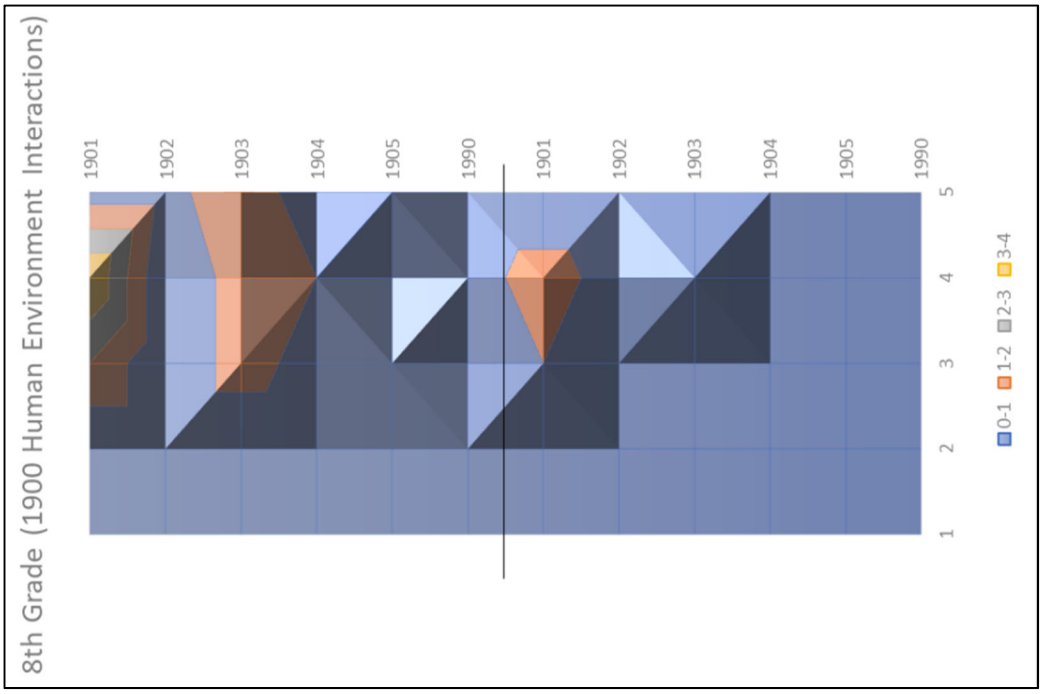


Figure 6.254. Geography Curriculum Correspondence between National Geography Standards and Indiana (8th grade) Social Studies Standards

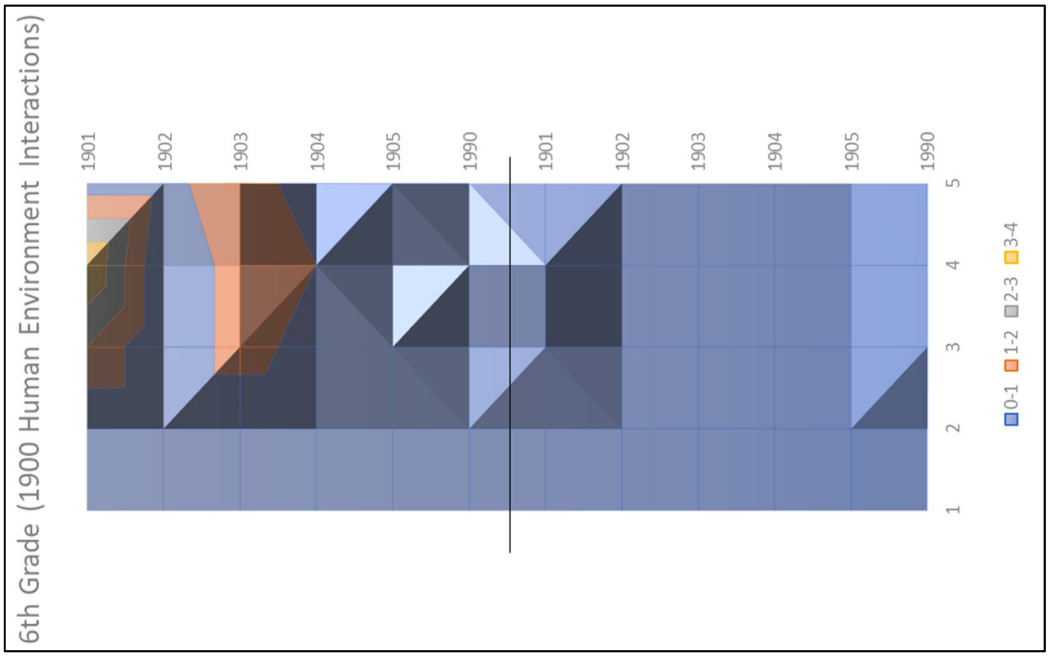
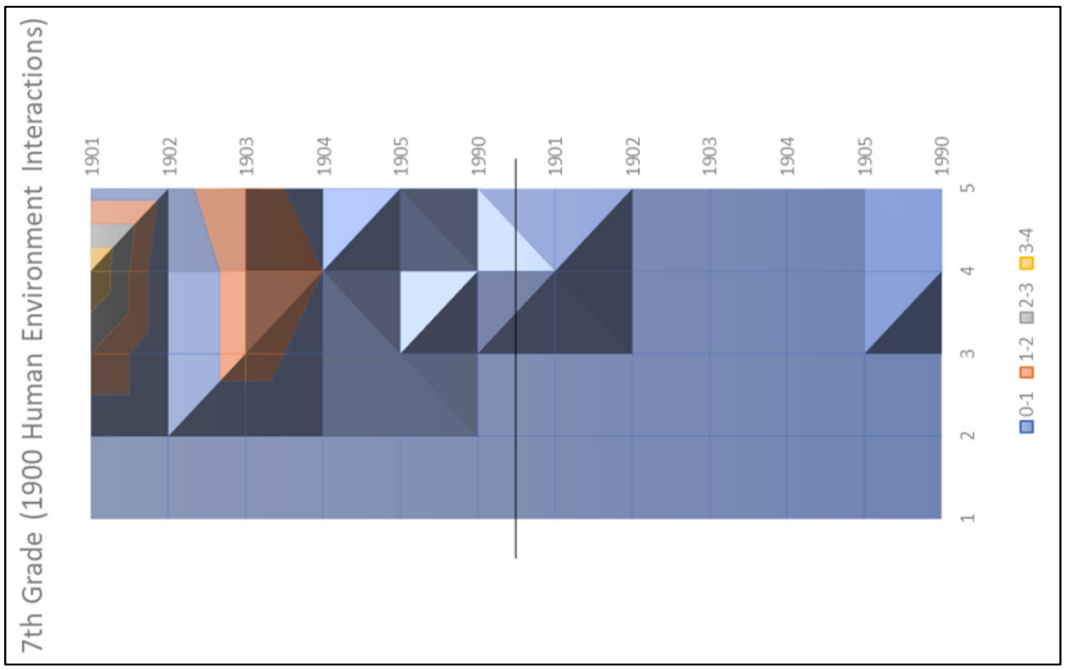


Figure 6.255. Geography Curriculum Correspondence between National Geography Standards and Iowa (6th grade) Social Studies Standards



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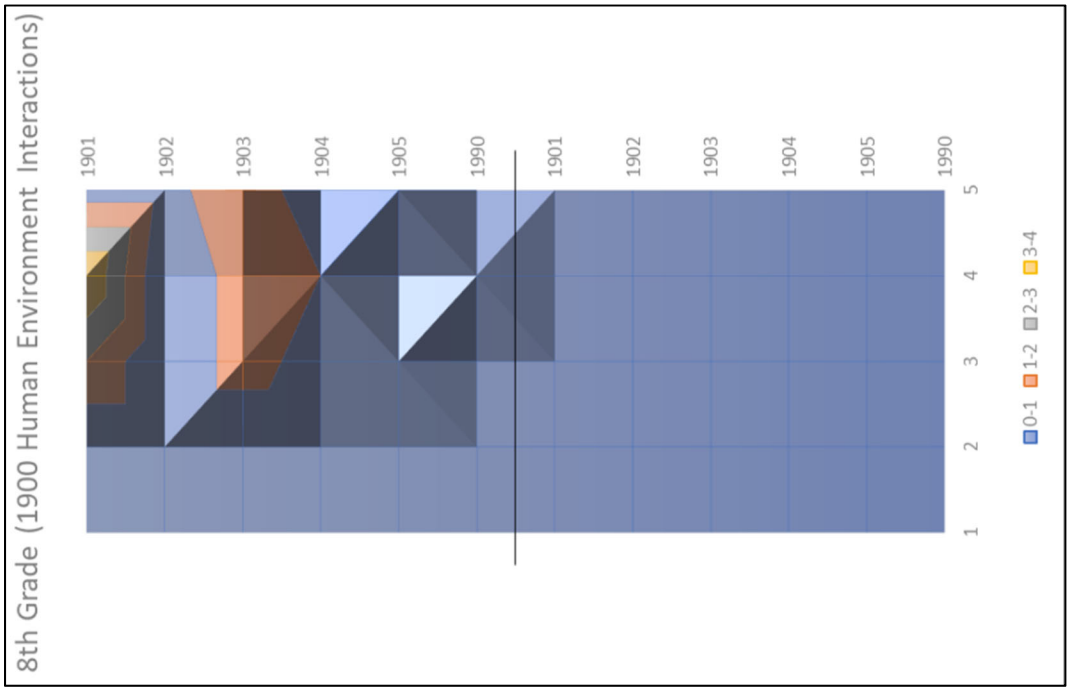


Figure 6.257. Geography Curriculum Correspondence between National Geography Standards and Iowa (8th grade) Social Studies Standards

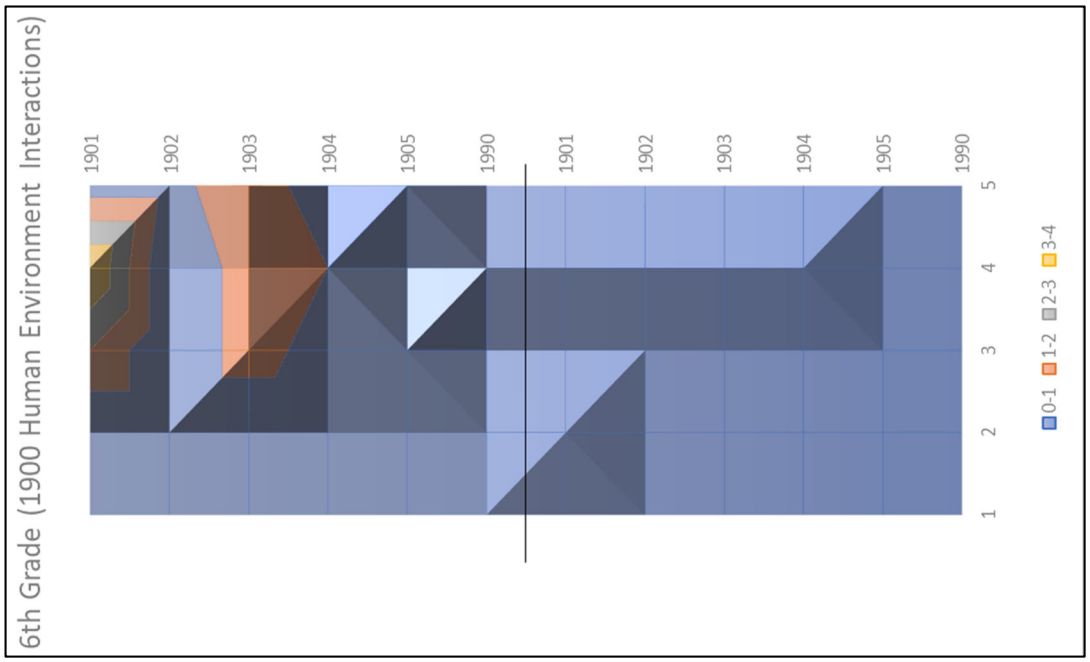


Figure 6.258. Geography Curriculum Correspondence between National Geography Standards and Kentucky (6th grade) Social Studies Standards

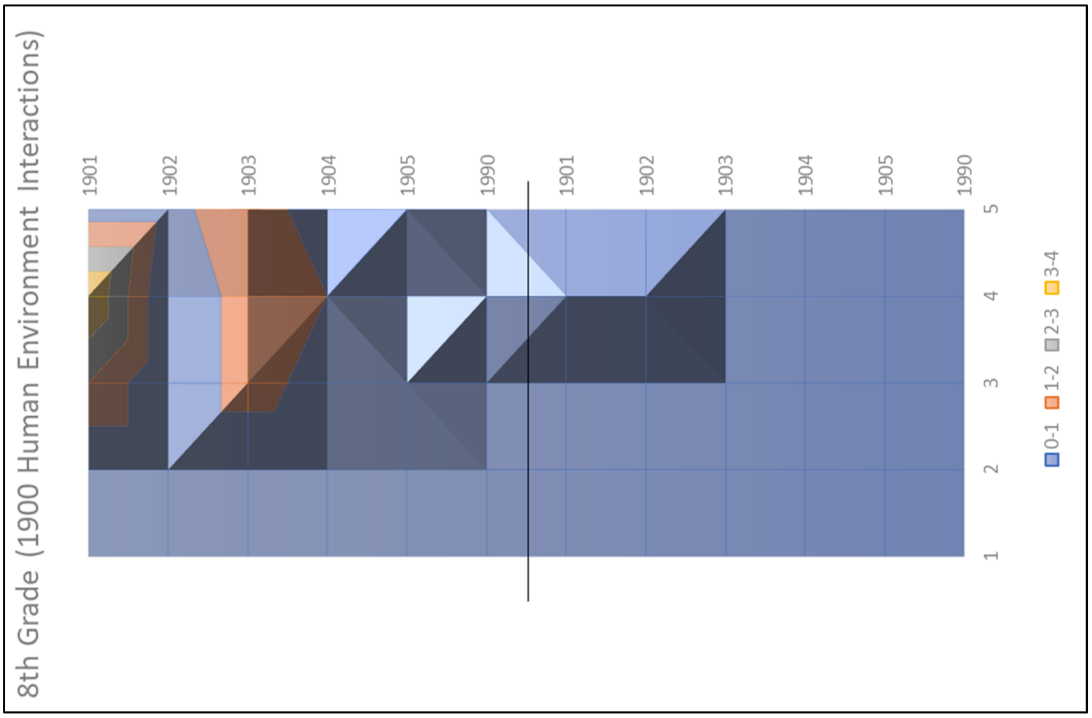


Figure 6.259. Geography Curriculum Correspondence between National Geography Standards and Kentucky (8th grade) Social Studies Standards

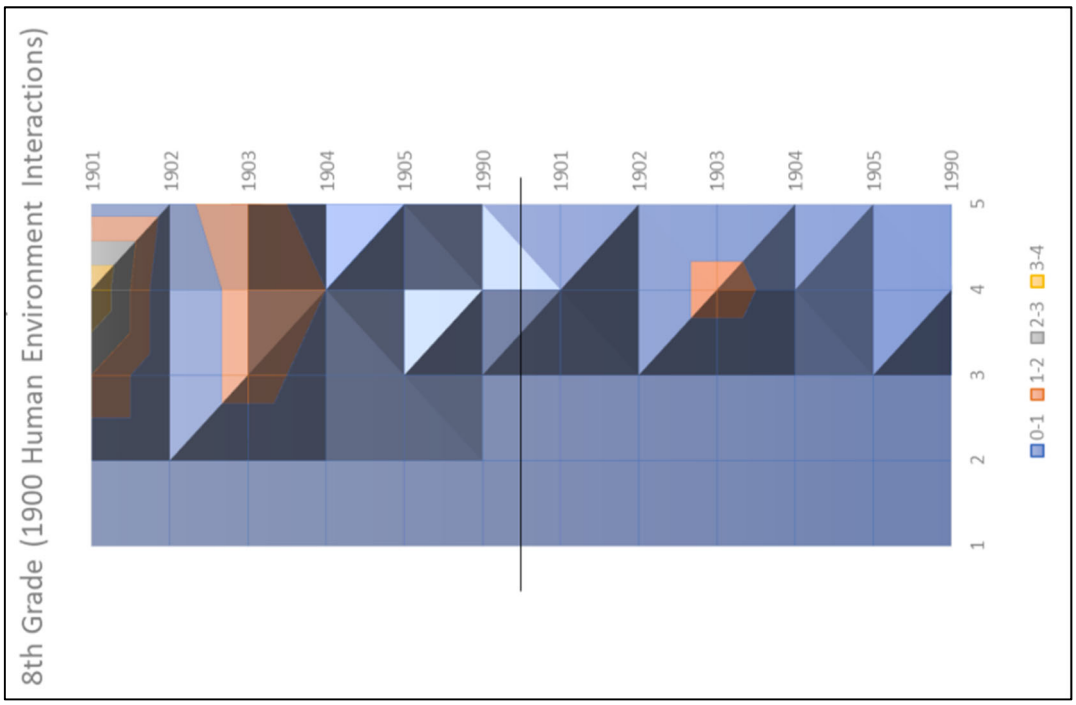


Figure 6.260. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

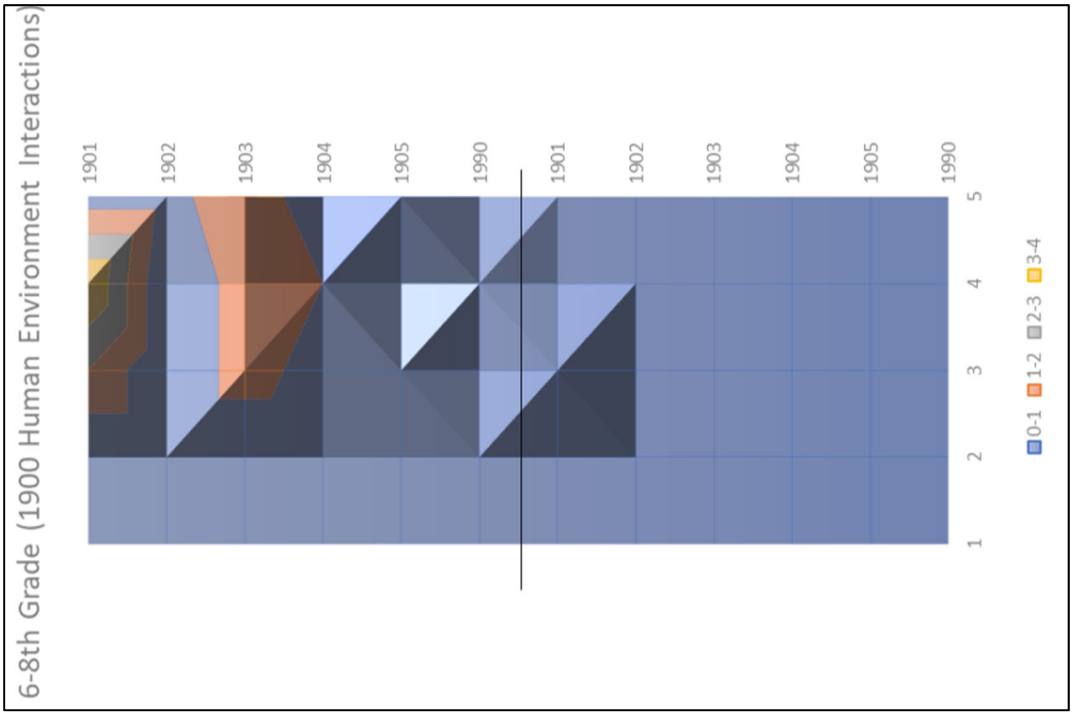


Figure 6.261. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

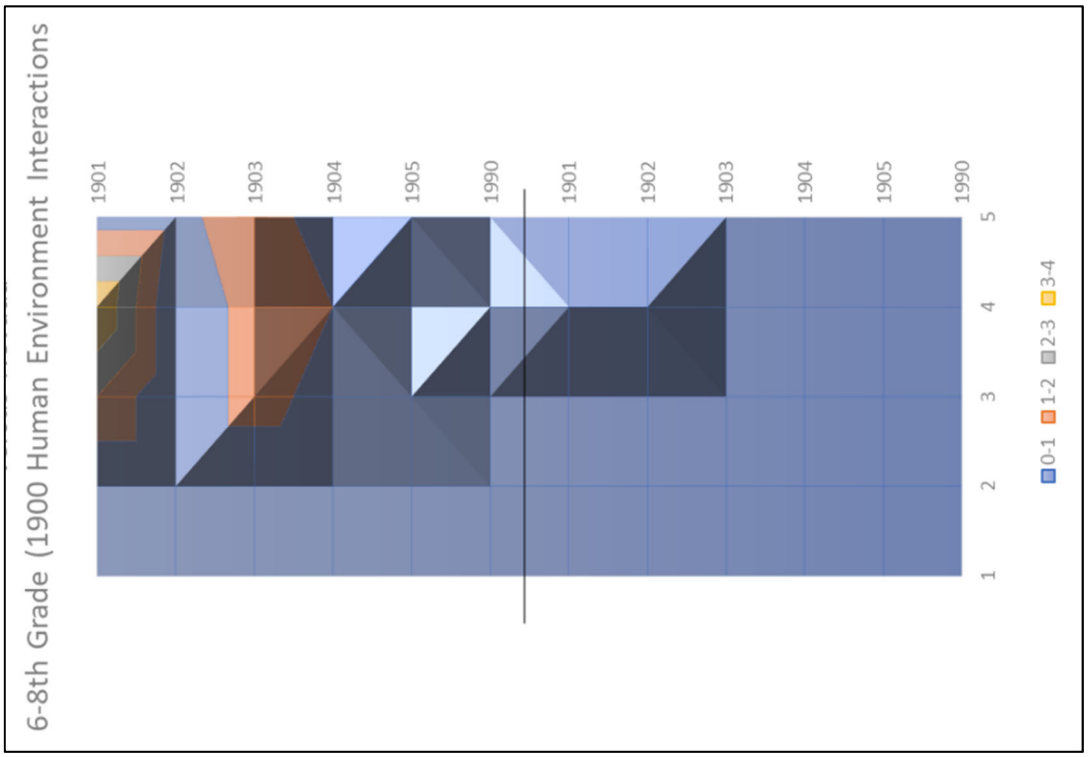


Figure 6.262. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

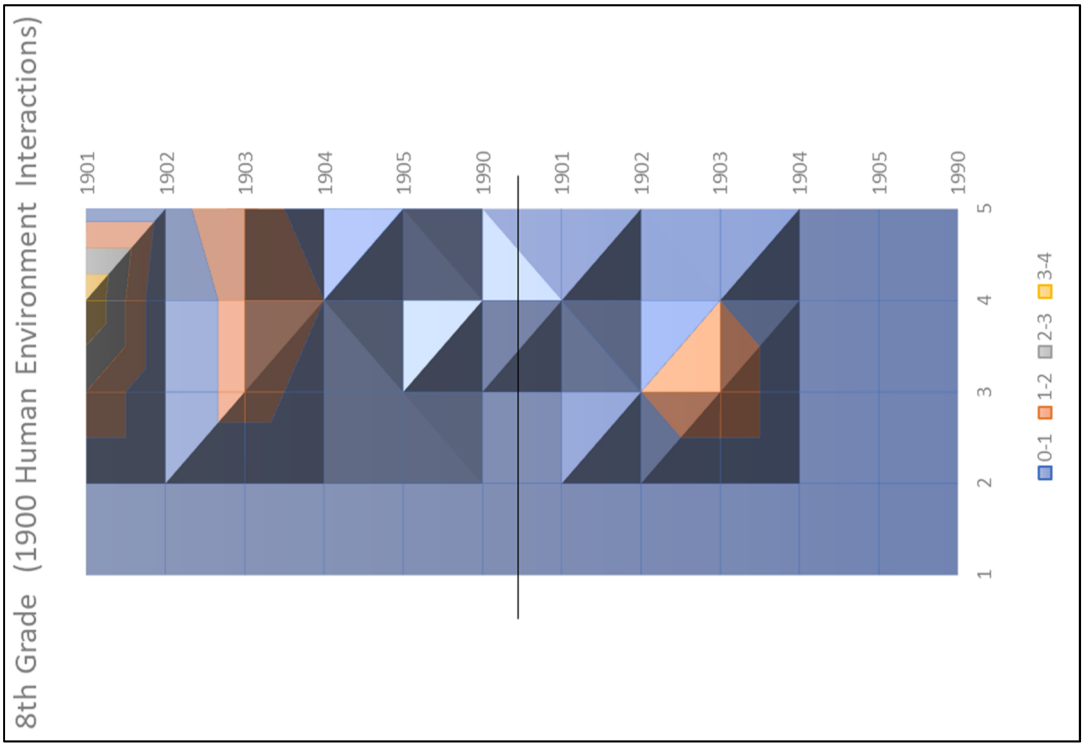


Figure 6.263. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

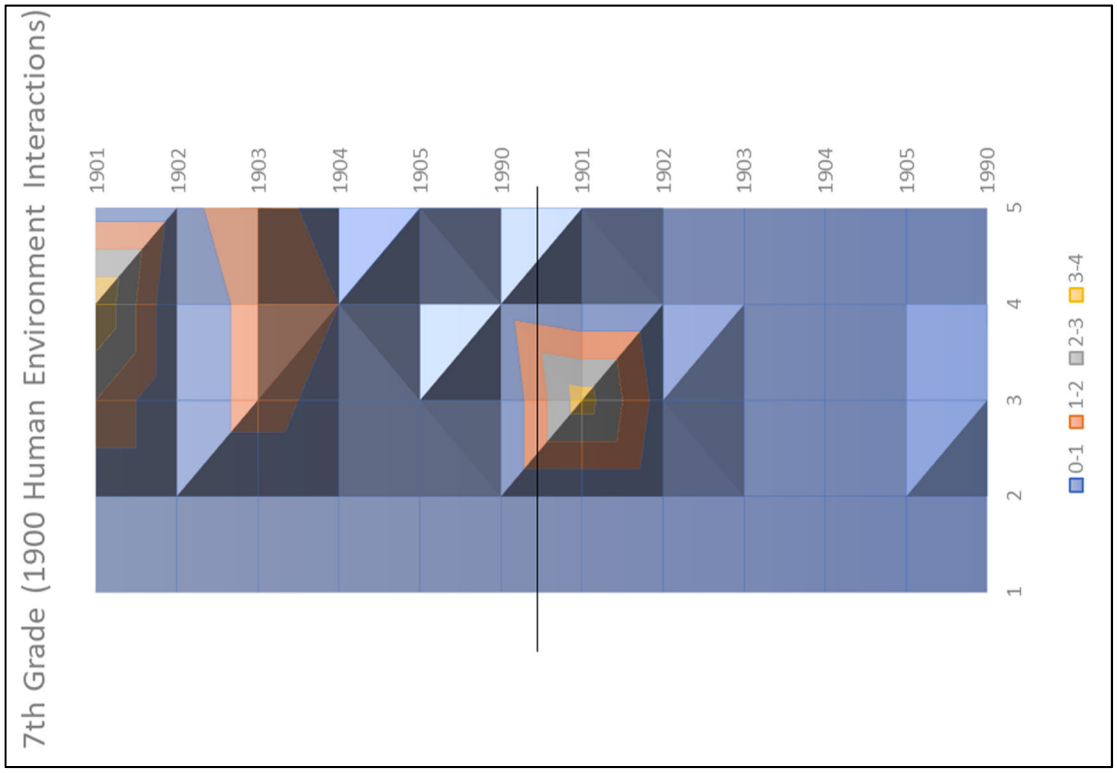


Figure 6.264. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

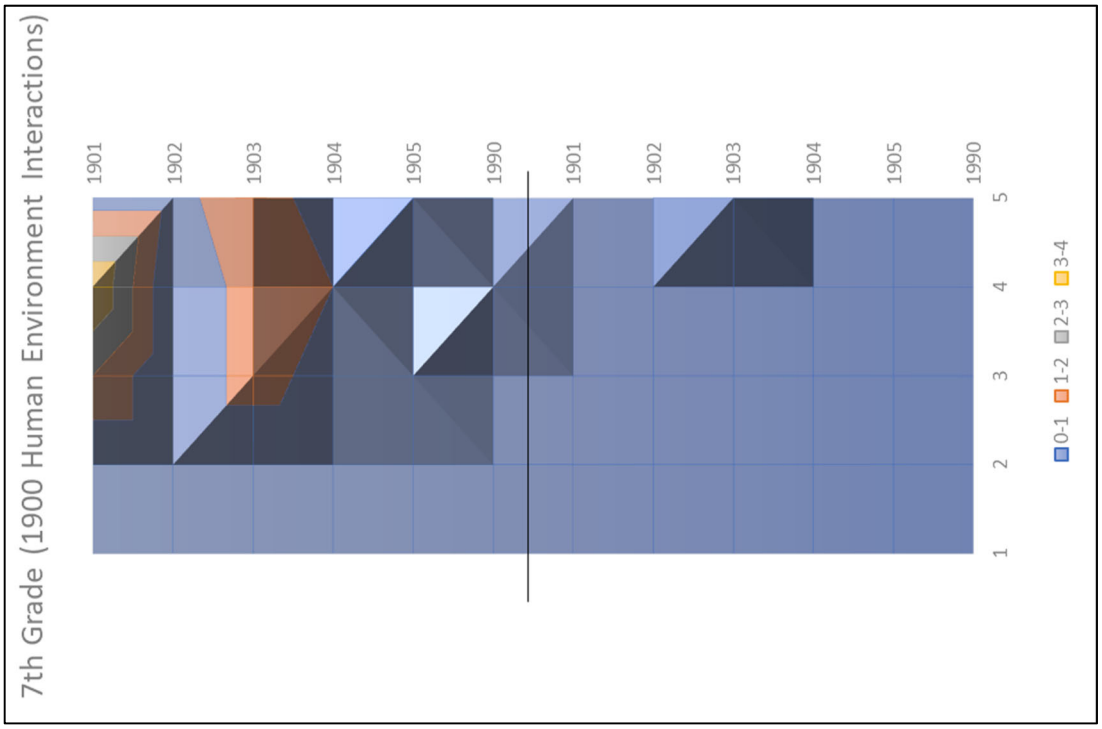


Figure 6.265. Geography Curriculum Correspondence between National Geography Standards and Utah Social Studies Standards

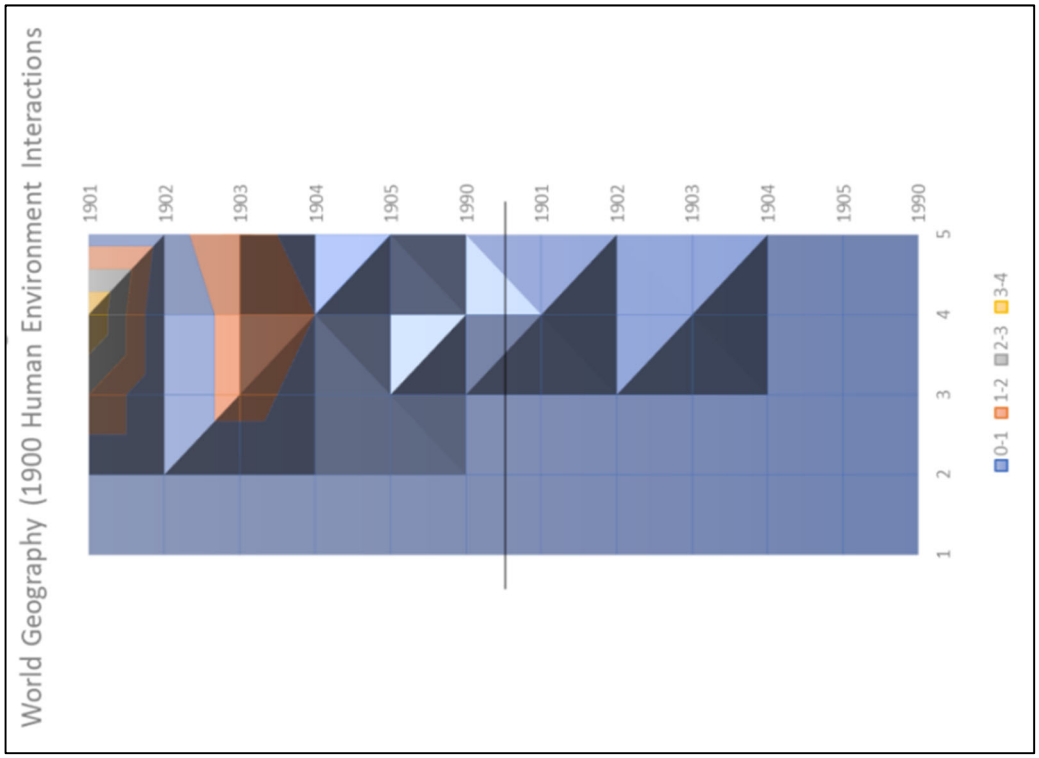


Figure 6.266. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

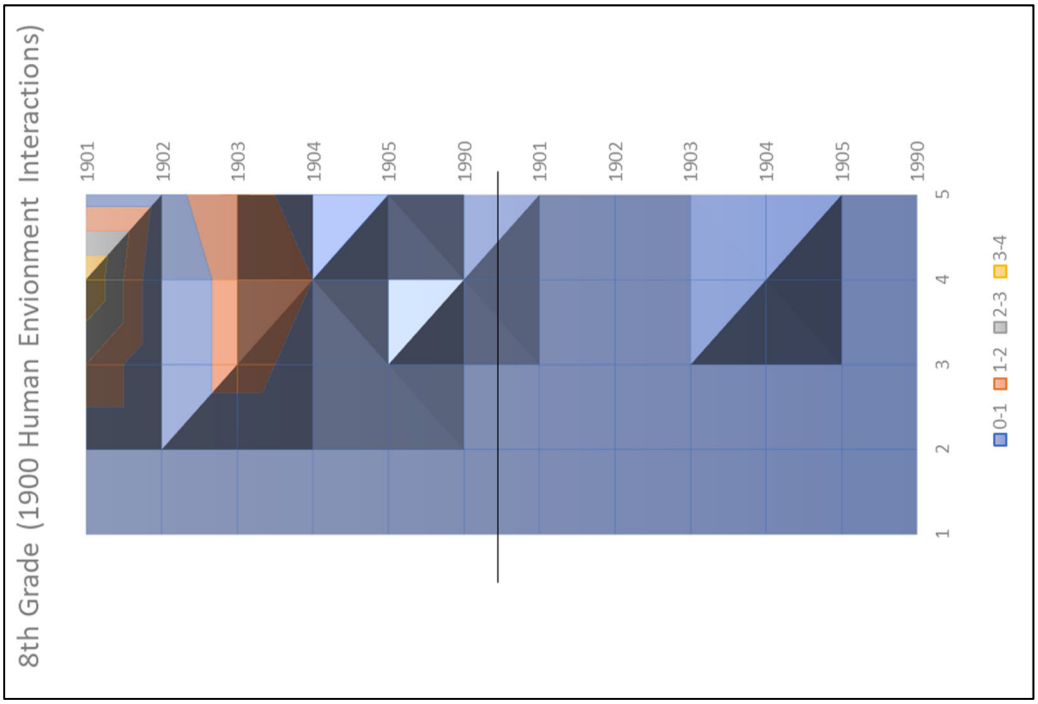


Figure 6.267. Geography Curriculum Correspondence between National Geography Standards and West Virginia Social Studies Standards

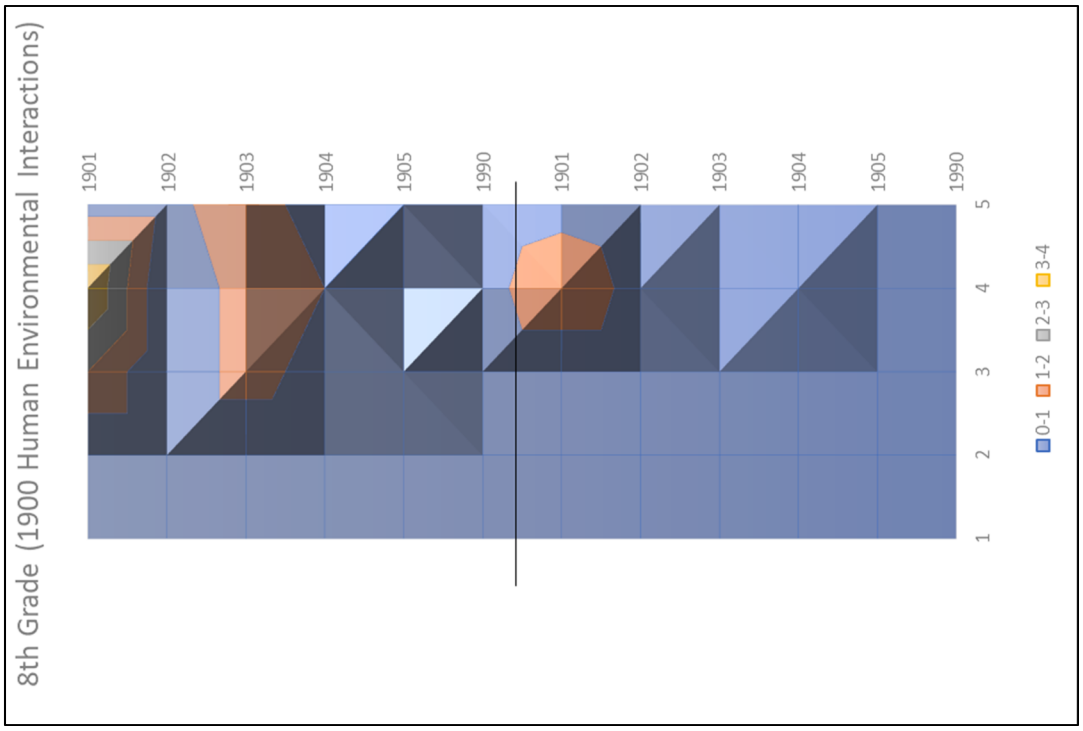


Figure 6.268. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

Grade 8 Inclusion of The Uses of Geography (2000)

By grade 8, states were more inclined to include standards on the uses of geography within the state social studies frameworks. The standards did not overall align with the depth and breadth written in the national geography standards, but there was an overall effort to include these matters. The alignment index ranged from 0.0 (Delaware 6-8) to 0.4818 (Arkansas 7th grade), with an average of 0.2076. Georgia and Iowa did not include any mention of the uses of geography within their standards in 6th, 7th, or 8th grade, and Maryland did not include any neither (Table 6.15). Figure 6.269 – 6.297 show no consistency among states about which topic to include, and it clearly shows how poorly the states are aligned to the national geography standards.

Table 6.15. Alignment Index of State Social Studies Standards to National Geography Standards- Grade 8 Benchmark for The Uses of Geography

State	2000 The Uses of Geography
Arkansas (7th)	0.4818
Connecticut (6 & 7)	0.4125
Delaware (6-8)	0.0000
Florida (6th)	0.0125
Florida (7th)	0.0125
Florida (8th)	0.2750
Georgia (6th)	NA
Georgia (7th)	NA
Georgia (8th)	NA
Idaho (6-9 west)	0.3125
Idaho (6-9 east)	0.3125
Illinois (6-8)	0.3250
Indiana (6th)	0.0125
Indiana (7th)	0.0625
Indiana (8th)	0.0625
Iowa (6th)	NA
Iowa (7th)	NA
Iowa (8th)	NA
Kentucky (6th)	0.2875
Kentucky (8th)	0.2625
Maryland (8th)	NA
Missouri (6-8)	0.0875
Nevada (6-8)	0.1750
New Jersey (8th)	0.3750
South Dakota (7th)	0.3736
Utah (7th)	0.2804
Virginia (World Geo)	0.0250
West Virginia (8th)	NA
Wyoming (8th)	0.2111
Average	*0.2076*

*Note: NA represents an absence of codes, or zero alignment. There were no codes present in the state social studies standards to calculate the index.

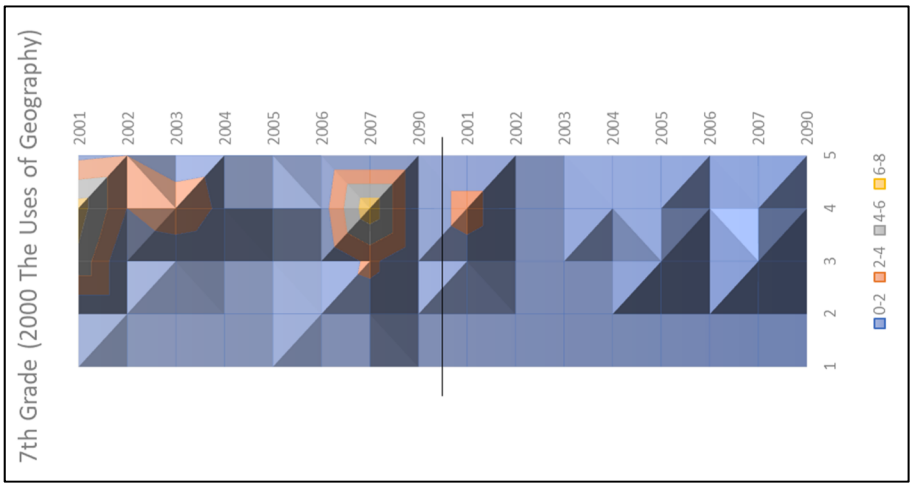


Figure 6.269. Geography Curriculum Correspondence between National Geography Standards and Arkansas Social Studies Standards

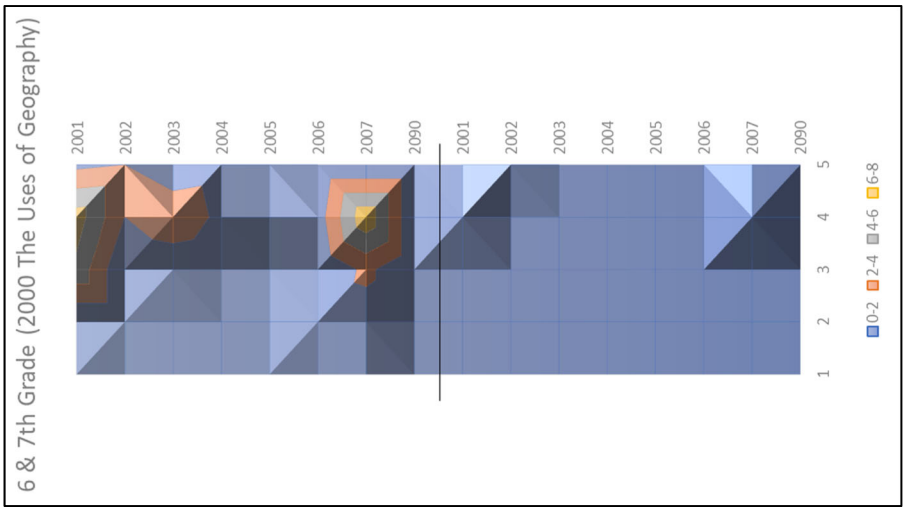


Figure 6.270. Geography Curriculum Correspondence between National Geography Standards and Connecticut Social Studies Standards

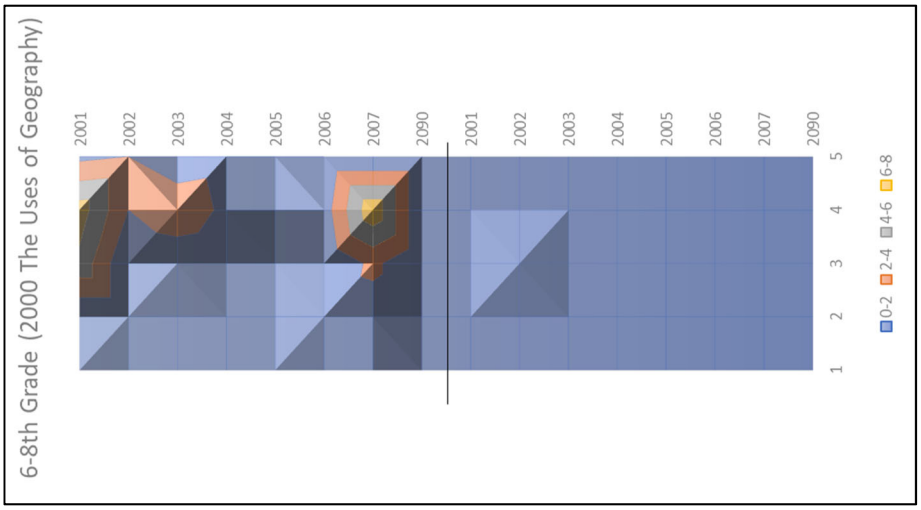


Figure 6.271. Geography Curriculum Correspondence between National Geography Standards and Delaware Social Studies Standards

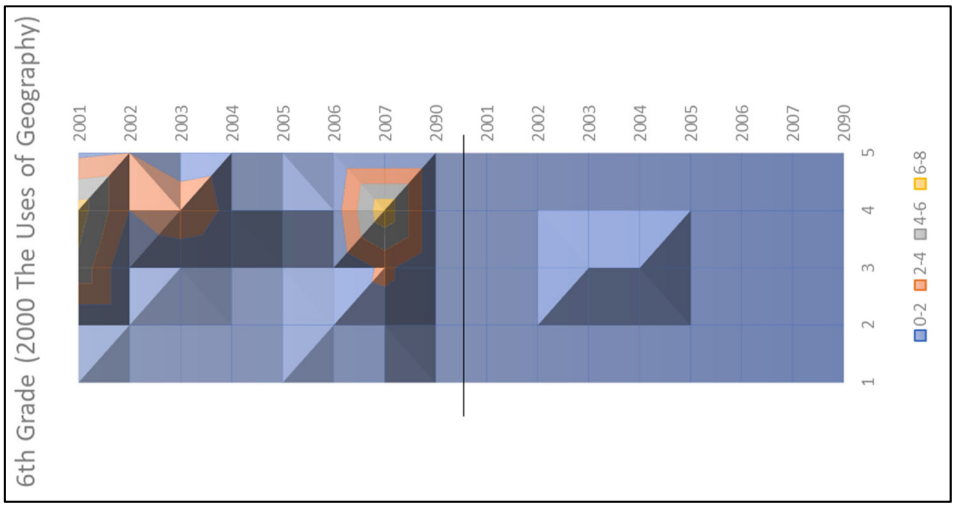


Figure 6.272. Geography Curriculum Correspondence between National Geography Standards and Florida (6trh grade) Social Studies Standards

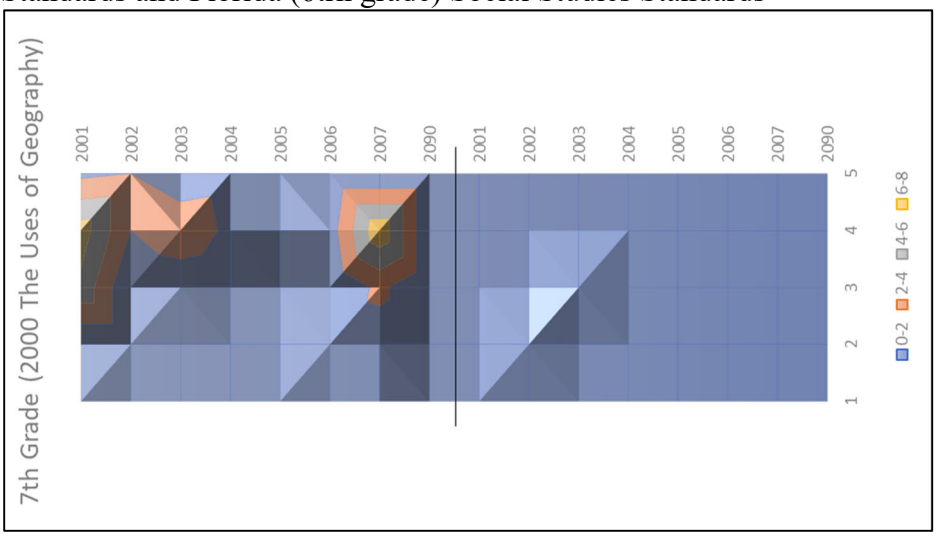


Figure 6.273. Geography Curriculum Correspondence between National Geography Standards and Florida (7th grade) Social Studies Standards

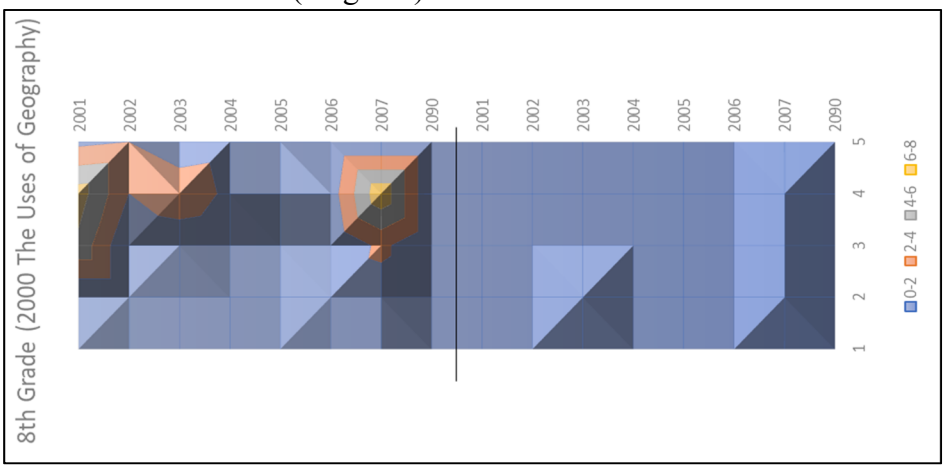


Figure 6.274. Geography Curriculum Correspondence between National Geography Standards and Florida (8th grade) Social Studies Standards

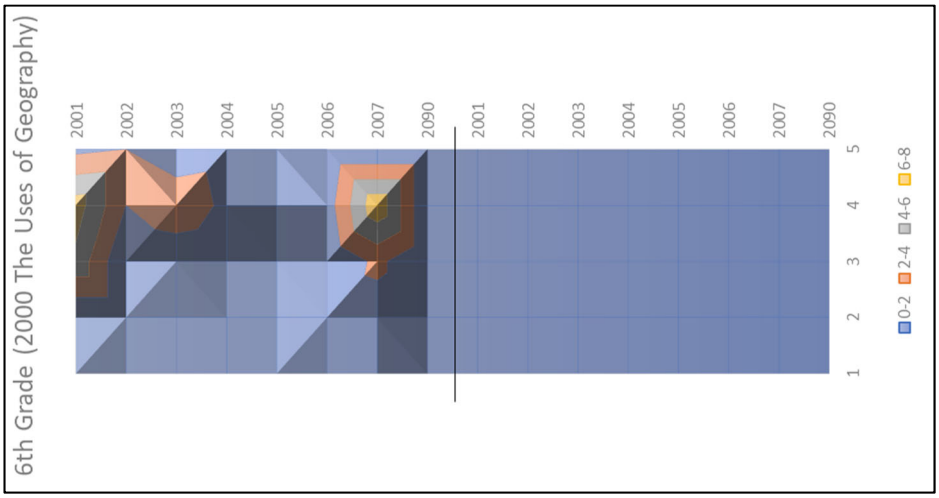


Figure 6.275. Geography Curriculum Correspondence between National Geography Standards and Georgia (6th grade) Social Studies Standards

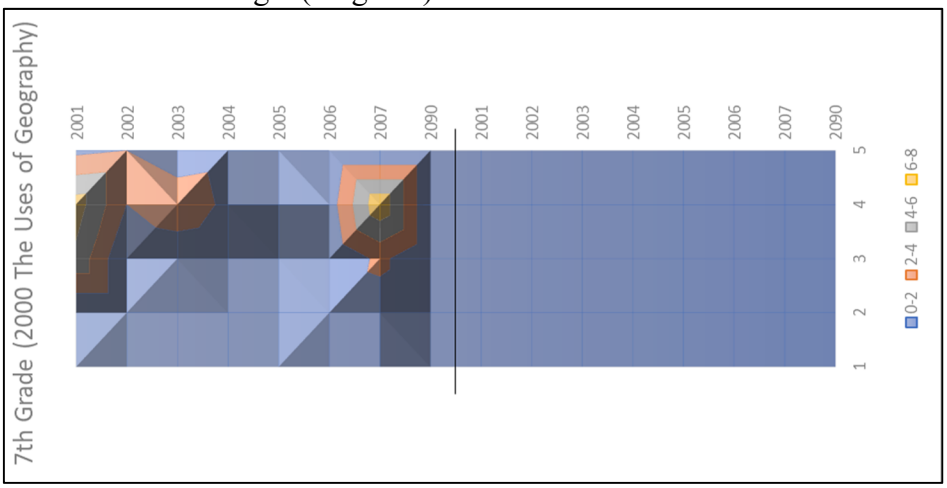
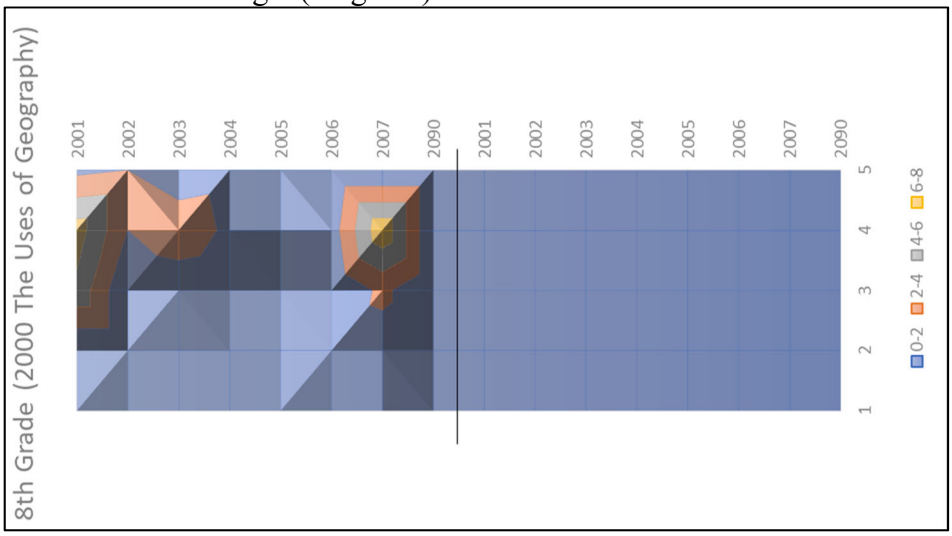


Figure 6.276. Geography Curriculum Correspondence between National Geography Standards and Georgia (7th grade) Social Studies Standards



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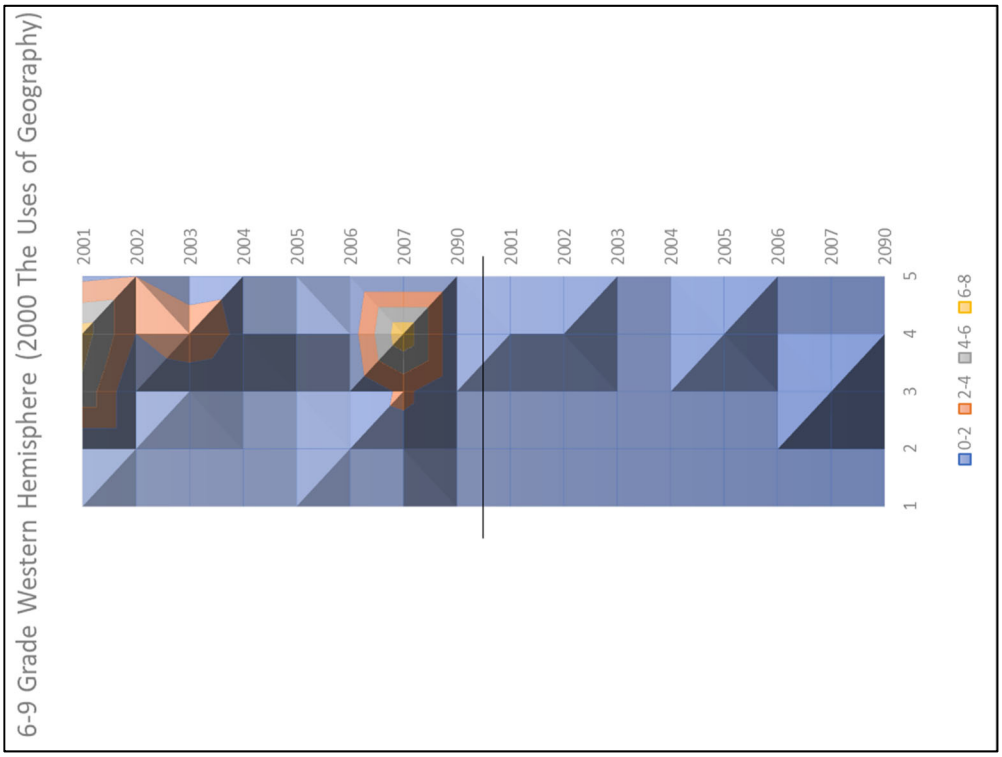


Figure 6.278. Geography Curriculum Correspondence between National Geography Standards and Idaho (western) Social Studies Standards

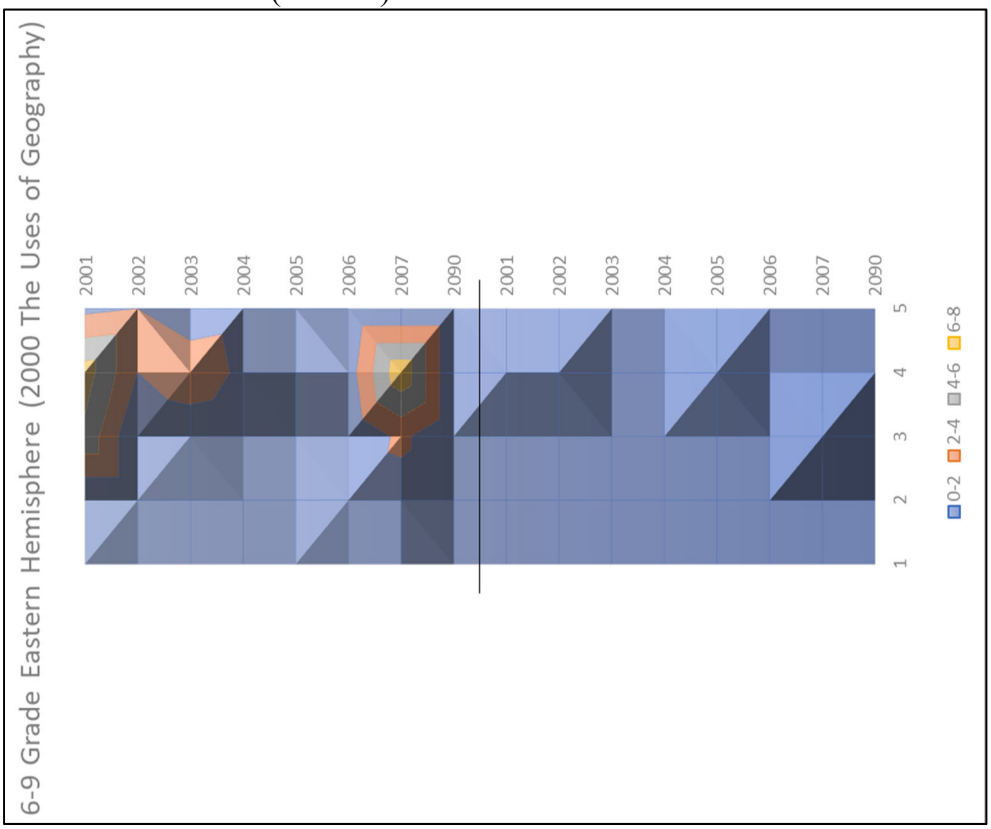


Figure 6.279. Geography Curriculum Correspondence between National Geography Standards and Idaho (eastern) Social Studies Standards

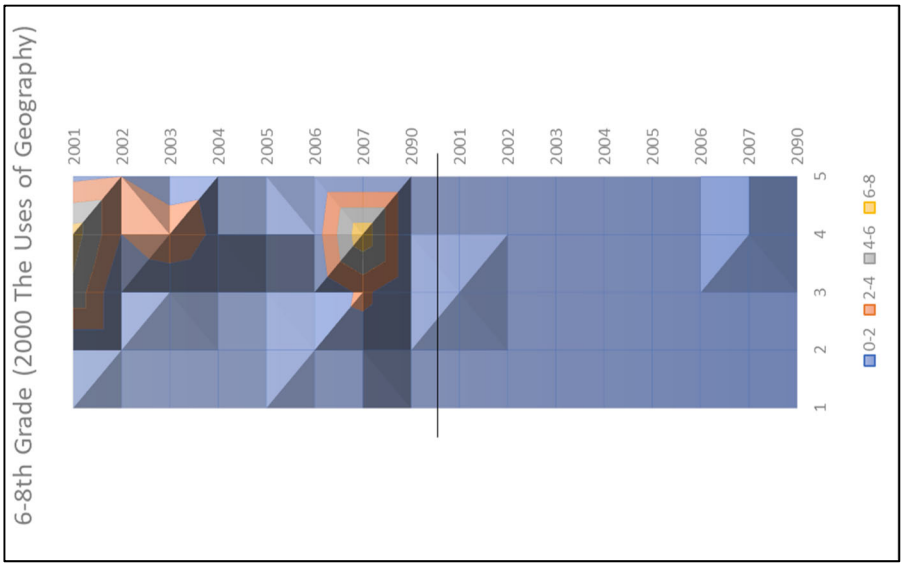


Figure 6.280. Geography Curriculum Correspondence between National Geography Standards and Illinois Social Studies Standards

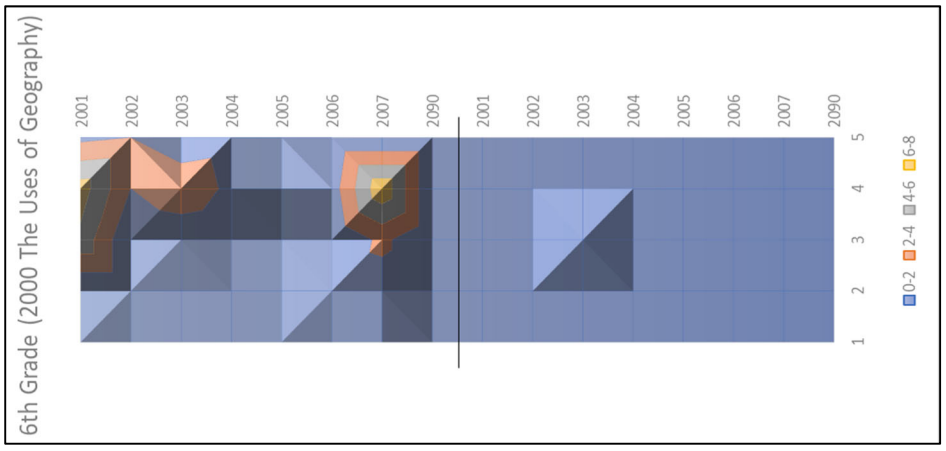


Figure 6.281. Geography Curriculum Correspondence between National Geography Standards and Indiana (6^{th} grade) Social Studies Standards

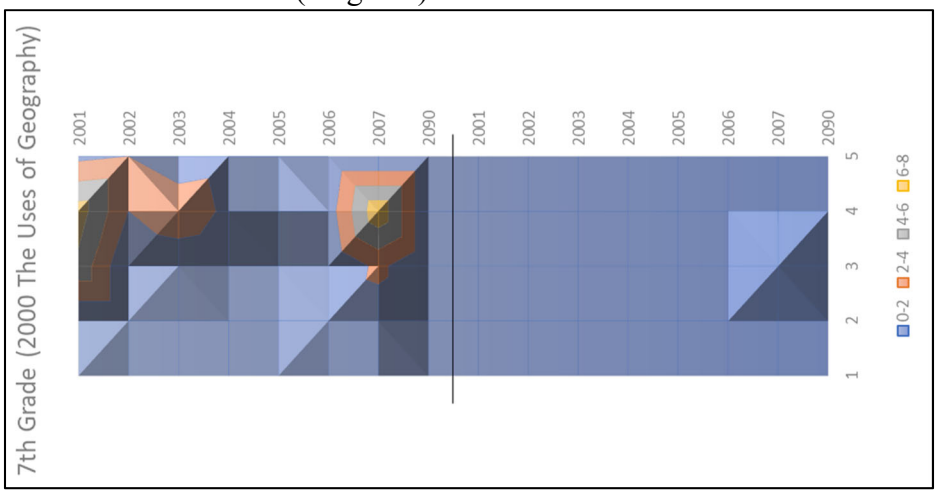


Figure 6.282. Geography Curriculum Correspondence between National Geography Standards and Indiana (7^{th} grade) Social Studies Standards

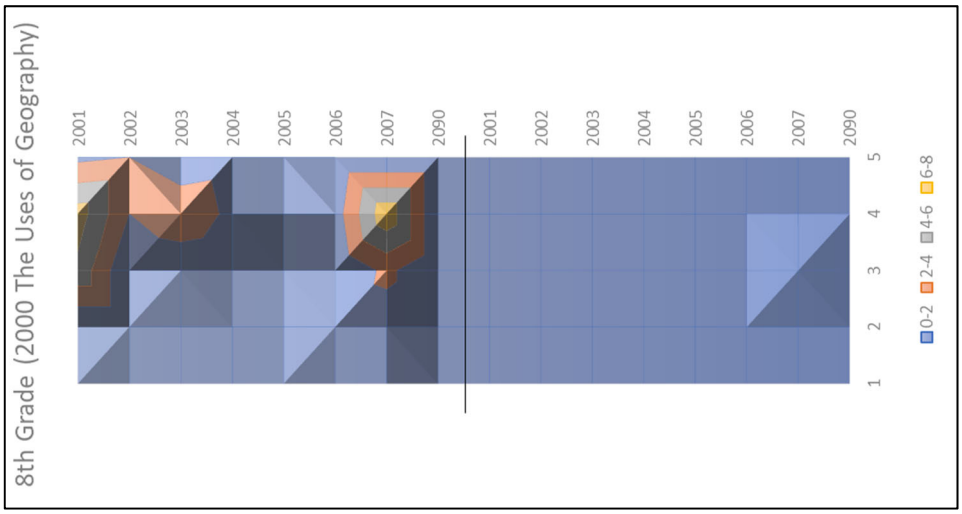


Figure 6.283. Geography Curriculum Correspondence between National Geography Standards and Indiana (8th grade) Social Studies Standards

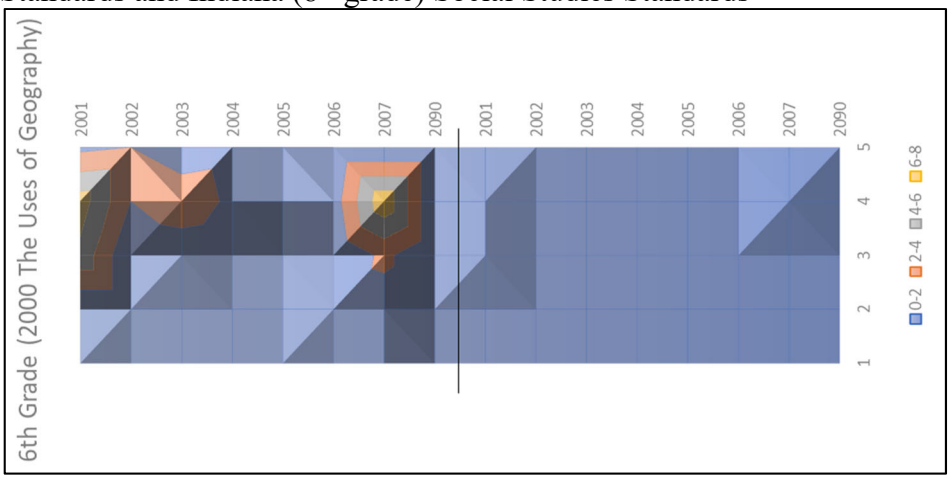
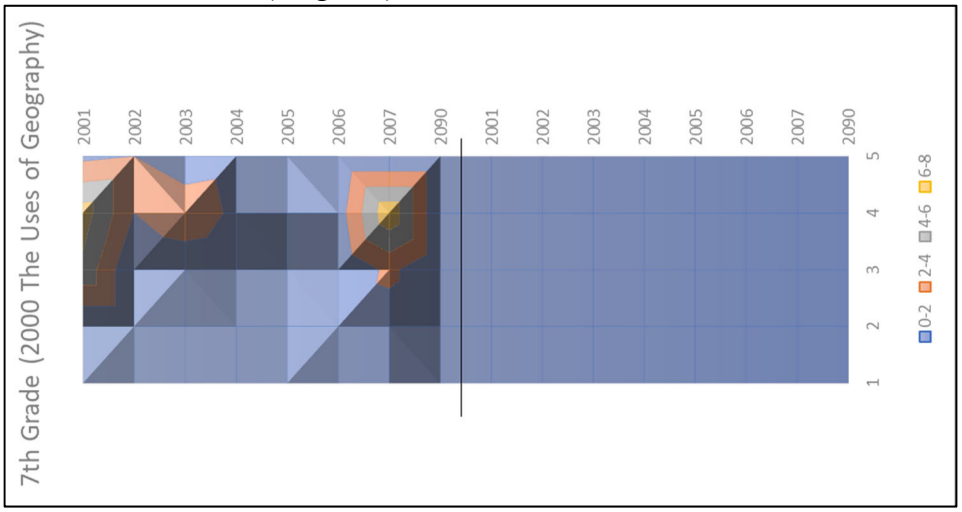


Figure 6.284. Geography Curriculum Correspondence between National Geography Standards and Iowa (6th grade) Social Studies Standards



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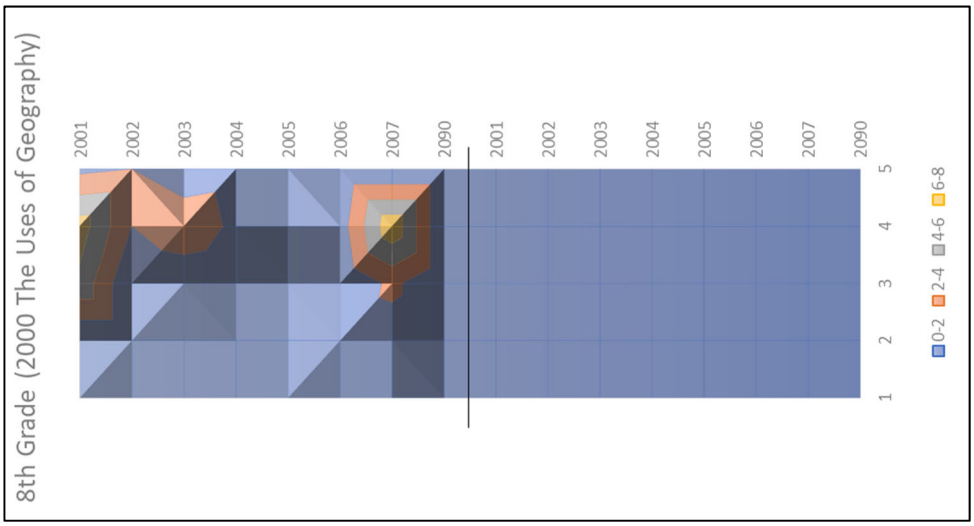

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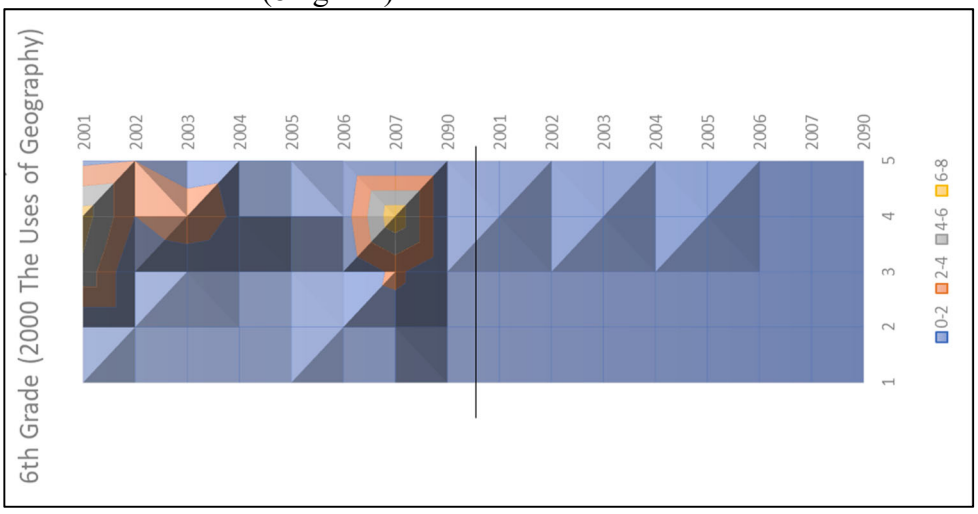

Figure 6.287. Geography Curriculum Correspondence between National Geography Standards and Kentucky (6th grade) Social Studies Standards

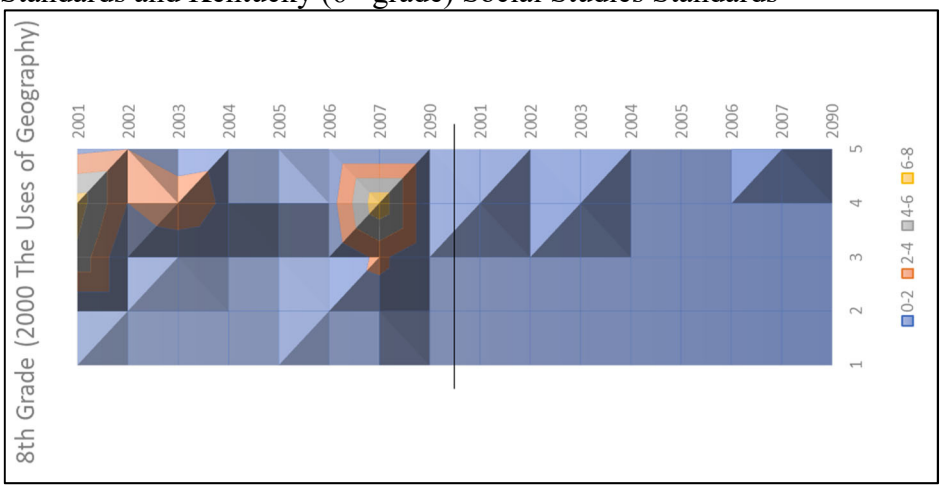

Figure 6.288. Geography Curriculum Correspondence between National Geography Standards and Kentucky (8th grade) Social Studies Standards

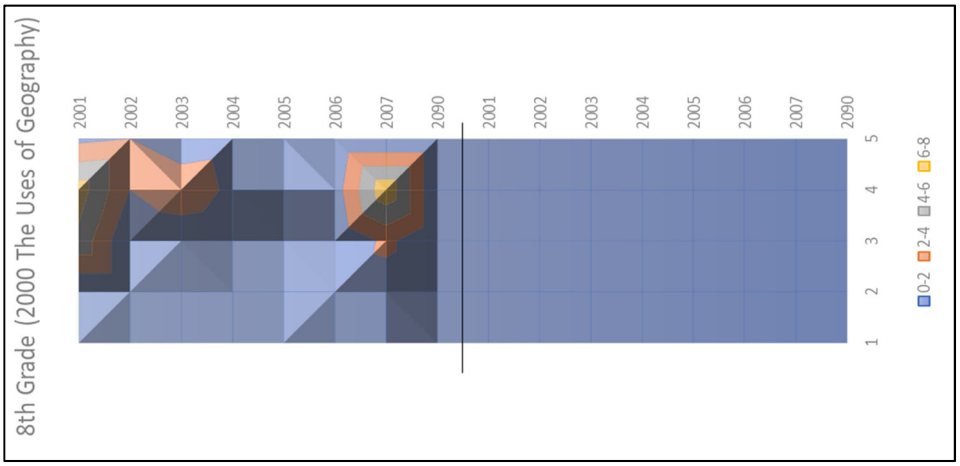

Figure 6.289. Geography Curriculum Correspondence between National Geography Standards and Maryland Social Studies Standards

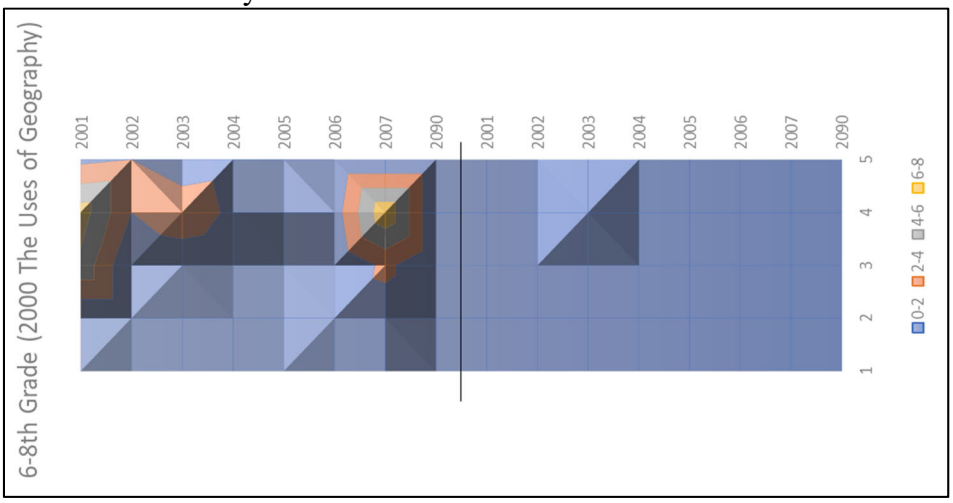

Figure 6.290. Geography Curriculum Correspondence between National Geography Standards and Missouri Social Studies Standards

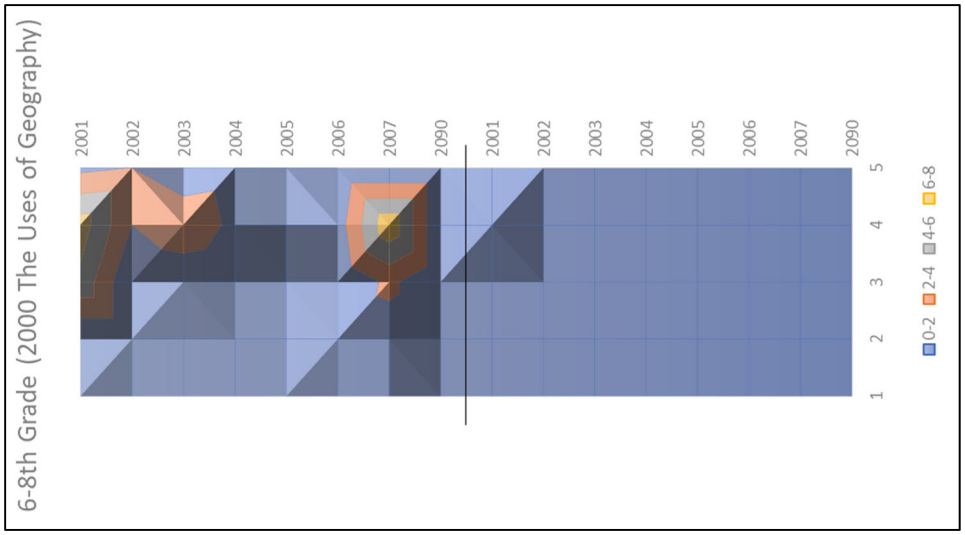

Figure 6.291. Geography Curriculum Correspondence between National Geography Standards and Nevada Social Studies Standards

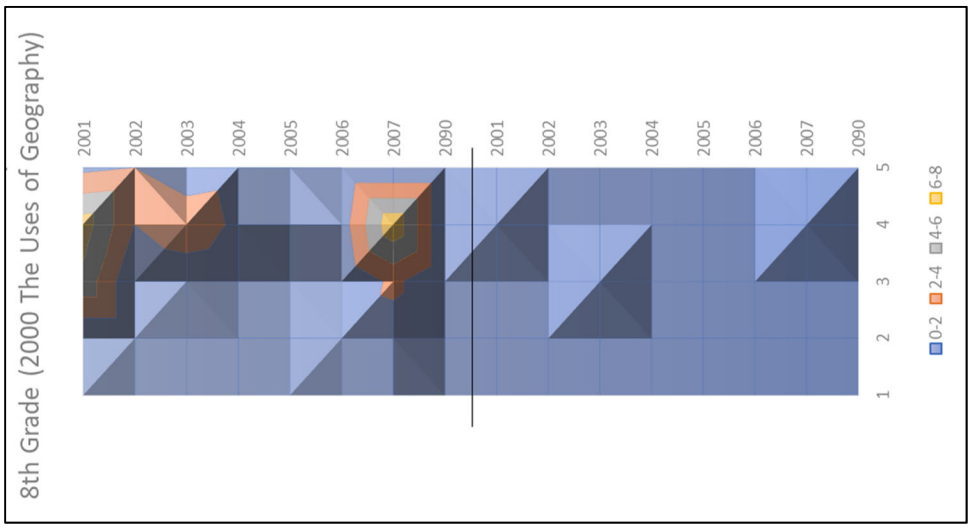

Figure 6.292. Geography Curriculum Correspondence between National Geography Standards and New Jersey Social Studies Standards

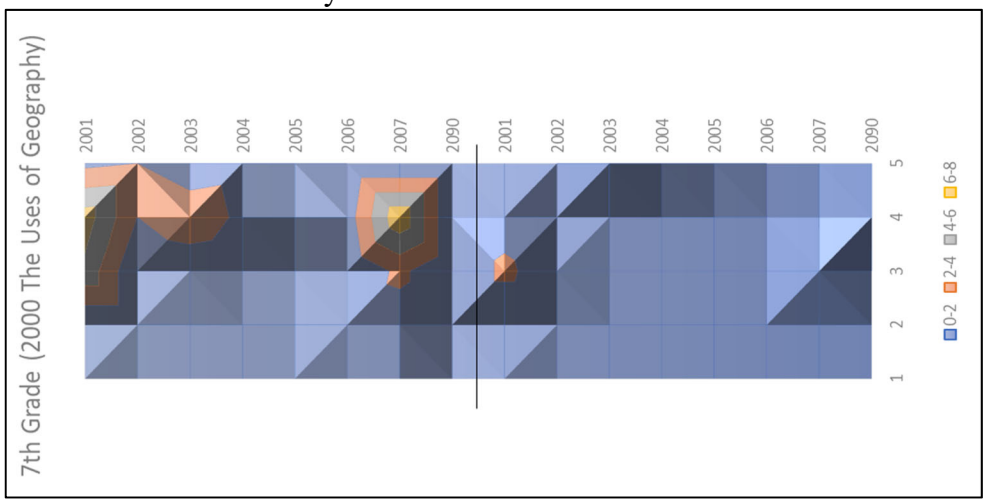

Figure 6.293. Geography Curriculum Correspondence between National Geography Standards and South Dakota Social Studies Standards

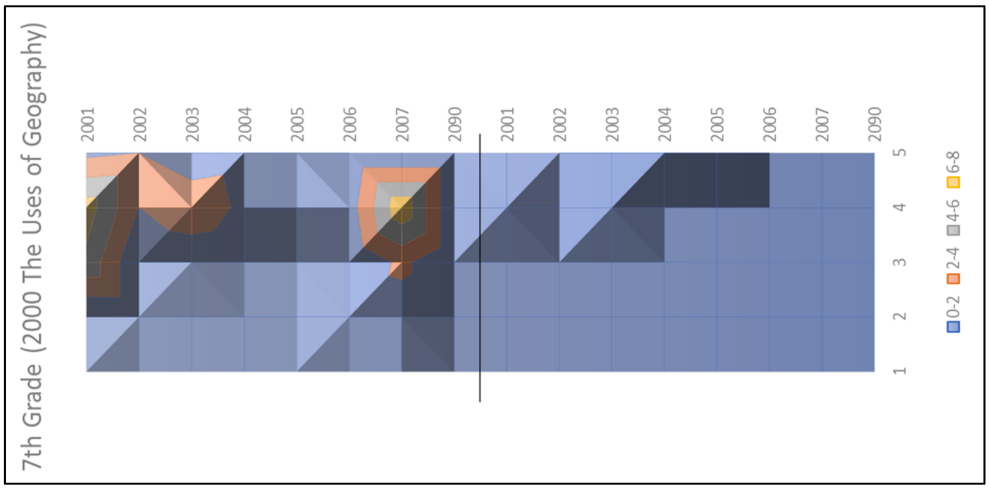

Figure 6.294. Geography Curriculum Correspondence between National Geography Standards and Utah Social Studies Standards

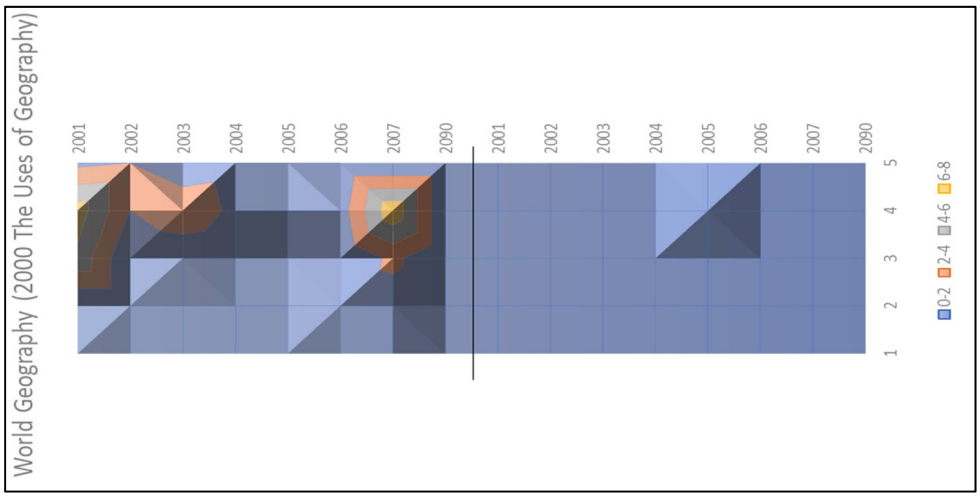

Figure 6.295. Geography Curriculum Correspondence between National Geography Standards and Virginia Social Studies Standards

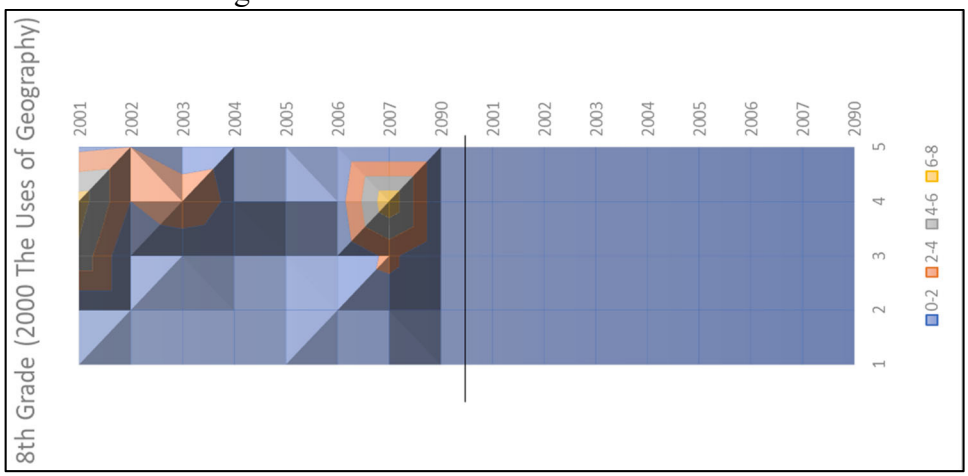

Figure 6.296. Geography Curriculum Correspondence between National Geography Standards and West Virginia Social Studies Standards

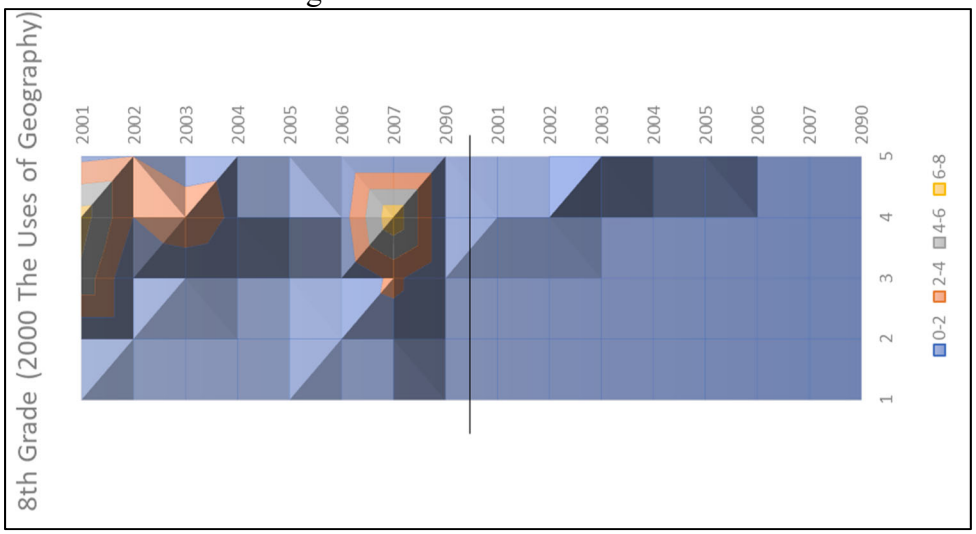

Figure 6.297. Geography Curriculum Correspondence between National Geography Standards and Wyoming Social Studies Standards

The Various Geography Frameworks

In K-12 education, geography is typically one of the four core academic subjects in the social studies curriculum. Usually in grades K-5, geography is embedded within the social studies standards as a strand and is taught in conjunction with the other disciplines (Zadrozny 2017). A strand is when geography is taught with other social studies content for a specific grade's standards. At the middle school grade span 6-8, however, social studies curriculum becomes more discipline focused with special attention on one or two subjects, such as world cultures, world regional geography, U.S. history, or world history. Social studies standards at these grades can also include geography as a strand alongside other disciplines, or a set of standalone standards that are directed towards one subject (Zadrozny 2017).

This information is important because it demonstrates how states structure their standards differently. There is no uniform framework that states use when writing social studies standards resulting in significant state to state differences as shown in Table 6.16. In fact in the process of developing the social studies standards, state writing committees pull from a variety of resources, organizations, and curriculum frameworks. Table 6.16 displays the structure used for geography standards within the 19 state social studies standards and the national geography standards. There is some evidence of *Geography for Life* (1994, 2012), but also the 2013 *College, Career, and Civic Life (C3) Framework* (NCSS), the "Five Themes", and traditional requirements such as culture, economy, and society.

Table 6.16. Geography Frameworks Structure and Outline

Arkansas	Connecticut	Delaware	Florida	Georgia
GRADE 4 Strand: Geography Content Standards 8-11 8: Geographic Representations 9: Human-Environment Interaction 10: Spatial Patterns and Movement 11: Global Interconnections GRADE 7 Strand: World in Spatial Terms Content Standard 1-4 Strand: Human Systems Content Standard 5-8 Strand Environment and Society Content Standard 9-10	GRADE 4 Strand: Geography Concepts: 1. Geographic Representations: Spatial Views of the World; 2. Human-Environment Interaction: Places, Regions, and Culture 3. Human Populations: Spatial Patterns and Movement GRADE 6 & 7 Strand: Geography Concepts: 1. Geographic Representations: Spatial Views of the World; 2. Human-Environment Interaction: Places, Regions, and Culture 3. Human Populations: Spatial Patterns and Movement 4. Global Interconnections: Changing Spatial Patterns	GRADE K-8 Strand: Geography Standard 1: Maps Standard 2: Environment Standard 3: Places Standard 4: Regions	GRADE 3 Strand: Geography Standard 1: The World in Spatial Terms Standard 2: Places and Regions Standard 3: Physical Systems Standard 4: Human Systems GRADE 4 Strand: Geography Standard 1: The World in Spatial Terms GRADE 6 Strand: Geography Content Standards 1-6 GRADE 7 Strand Geography Content Standards 1-6 GRADE 8 Strand: Geography Standard 1-6	GRADE 4 Geographical Understanding Standard 1-2 GRADE 6 Geographical Understanding Standard 1-12 GRADE 7 Geographical Understanding Standard 1-12 GRADE 8 Geographical Understanding Standard 1

Idaho	Illinois	Indiana	Iowa	Kentucky
GRADE 4 Standard: Geography Goal 2.1-2.5 Standard: Global Perspectives Goal 5.1 GRADE 6-9 (Western) Standard: Geography Goal 2.1-2.5 Standard: Global Perspectives Goal 5.1 GRADE 6-9 (Eastern) Standard: Geography Goal 2.1-2.5 Standard: Global Perspectives Goal 5.1	GRADE 4 Strand: Geography Content Topics: 1. Geographic Representations 2. Human-Environment Interaction 3. Human Population GRADE 6-8 Strand: Geography Content Topics: 1. Geographic Representations 2. Human-Environment Interaction 3. Human Population 4. Global Interconnections	GRADE 4 Standard: Geography 1. The World in Spatial Terms 2. Places and Regions 3. Physical Systems 4. Human Systems 5. Environment and Society GRADE 6 & 7 Standard: Geography 1. The World in Spatial Terms 2. Places and Regions 3. Physical Systems 4. Human Systems 5. Environment and Society GRADE 8 Standard: Geography 1. The World in Spatial Terms 2. Places and Regions 3. Physical Systems 4. Human Systems	GRADE 4 Standard: Geography 1. Create Geographic Representations 2. Evaluate Human Environment Interaction 3. Analyze Human Population, Movement, and Patterns GRADE 6 Standard: Geography 1. Create Geographic Representations 2. Evaluate Human Environment Interaction 3. Analyze Human Population, Movement, and Patterns 4. Analyze Global Interconnections GRADE 7 Standard: Geography 1. Analyze Human Population, Movement, and Patterns 2. Analyze Global Interconnections GRADE 8 Standard: Geography 1. Evaluate Human Environment Interaction 2. Analyze Human Population, Movement, and Patterns	GRADE K-8 Big Idea: Cultures and Societies Big Idea: Geography

Maryland	Missouri	Nevada	New Jersey	South Dakota
GRADE K-8 Content Standard 2.0: Peoples of the Nations and World Content Standard 3.0: Geography	GRADE 4 Content Standard 5: Knowledge of major elements of geographical study and analysis and their relationship to changes in society and the environment. Content Standard 6: Knowledge of relationships of the individual and groups to institutions and cultural traditions. GRADE 6-8 Content 3: Geographical Study Theme 1: Tools of Social Science Inquiry Theme 2: World Geography and Cultures Content: People, Groups and Cultures Theme 1: Tools of Social Science Inquiry Theme 2: World Geography and Cultures	GRADE K-8 Content Theme: Geography 1. Create geographic representations 2. Evaluate human environment interaction 3. Analyze human population, movement, and patterns 4. Analyze global interconnections	GRADE K-8 Standard 1: U.S. History: America in the World Strand: Geography, People, and the Environment Standard 2: World History/Global Studies Strand: Geography, People, and the Environment Standard 3: Active Citizenship in the 21st Century Strand: Geography, People, and the Environment	GRADE K-8 Strand: Geography

Utah	Virginia	West Virginia	Wyoming	National Geography Standards
GRADE 7 Strand 1: Native Innovations and Adaptations UT Standard 1.2 Strand 2: Utah's Diverse People UT Standard 2.3; 2.5; 2.6 Strand 4: Utah in the World UT Standard 4.4; 4.5 Strand 5: Looking towards Utah's Future UT Standard 5.2	VIRGNIA STUDIES Standard VS.2: Virginia: The Physical Geography and Native Peoples Standard VS.10: Virginia: 1900 to Present WORLD GEOGRAPHY Standards WG.2-18	GRADE K-8 Strand: Geography	GRADE K-8 Content Standard 2: Culture and Cultural Diversity Content Standard 5: Peoples, Places, and Environments	GRADE K-12 Essential Element 1: The World in Spatial Terms Standards 1-3 Essential Element 2: Places and Regions Standards 4-6 Essential Element 3: Physical Systems Standards 7-8 Essential Element 4: Human Systems Standards 9-13 Essential Element 5: Environment and Society Standards 14-16 Essential Element 6: The Uses of Geography Standards 17-18

CHAPTER VII

CONCLUSIONS

This study has adapted and used the Survey of Enacted Curriculum method (Blank, Porter, and Smithson 2001) to gauge and interpret the degree of alignment between the geography portions of state social studies standards and *Geography for Life: National Geography Standards* (2012). After a thorough investigation of the state social studies standards, it appears that the vertical alignment between the national geography standards and the sample of 19 state social studies standards is variable, and generally low.

The results of this analysis have been displayed both statistically and graphically and have generated the following conclusions:

1) Implementation of *Geography for Life: National Geography Standards* (2012), in the form of knowledge statements, into the geography portions of state social studies frameworks was small and uneven. Based upon an alignment index ranging 0.0 (no alignment) to 1.0 (perfect alignment), in grade 4, the average alignment index was 0.1677, ranging from 0.0 to 0.6256. At grade 8, the average alignment index was 0.2184, ranging from 0. 0 to 0.6331.
2) There was wide variation among the states in their adoption of the *Geography for Life* knowledge statements for each of the major geography content areas (Map Skills, Places and Regions, Physical Geography, Human and Cultural Geography, Human/Environment Interaction, the Uses of Geography). There was a significant difference between what states deemed to be important knowledge, such as South

Dakota's focus on Places and Regions in grade 4 compared to Arkansas' more evenly distributed incorporation of the six major content areas.

3) There was a large variation among states in terms of student expectations (cognitive demand). Generally, the national geography standards set higher student expectations than state social studies standards in terms of cognitive demand.
4) Reflecting on Table 6.16, each state organized and wrote their standards differently with minimal uniform effort to repeat the language or the directives of *Geography for Life* (2012). States drew their basic geography structure from different curriculum frameworks, including the six essential elements of *Geography for Life* (1994, 2012), the four disciplinary tools and concepts of geography mentioned in the *College, Career, and Civic Life (C3) Framework for Social Studies State Standards* (NCSS 2013), and the five fundamental themes of geography from the *Guidelines for Geographic Education* (Natoli 1984).
5) This research demonstrates the important and independent role of state-specific disciplinary standards and how there is a reluctance to accept the requirement of only one set of disciplinary standards.
6) Data generated by this analysis will enrich our understanding of the extent of curricular vertical alignment in geography on a state-by-state basis and will aid current and future teaching and learning in U.S. schools.

Implications of the Conclusions from this Research

Value for Future National Geography Standards Writers

It has been six years since the second revision of *Geography for Life: National Geography Standards* (2012) was published during which changes have occurred in the world and in the discipline of geography and geography education. This study suggests that new objectives and procedures be used by curriculum writers to improve the likelihood that any new national standards be more closely aligned to state social studies curriculum frameworks. This should result in better geography being taught and learned in K-12 schools.

The results of this study will provide useful information that can be used to create thoughtful national standards, but also to provide suggestions for state-specific standards in geography that more closely match state specific social studies requirements. Greater insight into the focus of geography within a state can help geographic educators develop high quality standards specific to the societal realities and local demands of that state. Such attention to the nature and needs of state-based education will more closely assist students in achieving their personal ambitions through the mastery of geography content and method. This is no easy feat and requires the involvement of geographic educators in each state working closely with state curriculum writers, K-12 geography and social studies teachers, and social studies specialists.

Value for Future State Geography Standards Writers

States typically revise their content standards on a regular basis, ranging from every 5-10 years. In severe cases, states do not update their content standards over a decade-long period due to funding restrictions, or in the case of California and New York, a curriculum framework that serves as a teacher's guide is revised instead of

content standards (Zadrozny 2017). The result of this study can inform the process of state standards revision and guide state standard writers in such a manner that they can strengthen geography standards. The result will be students who are geographically informed, and it will prepare them for college, careers, and a responsible civic and environmental life.

This study highlighted that some states still place a large emphasis on place-name locations and asking students to find features on a map. In a world where these answers can be easily found, K-12 geography education needs to turn away from the bushel basket of facts, and instead be framed as a meaningfully discipline that can provide students with a wealth of knowledge and deep critical thinking skills.

This study also revealed the gaps of geography instruction throughout the K-8 curriculum. In some states, geography standards were outnumbered by world and U.S. history. Some states did not even include geography standards at certain grades. Therefore, states should begin to find innovative ways to intertwine geography and history standards, and even economic and civic standards, as a way to strengthen the social studies and compete as a relevant school subject.

Value for Pre-Service Teacher Education Programs and In-Service Professional Development

One of the long-standing limitations of successful geography teaching and learning is the lack of highly-qualified geography teachers. Gilbert M. Grosvenor used to say that as long as pre-service programs stayed the same, there would always be a need for in-service professional development in geography. Across the nation, teacher

preparation programs require pre-service teachers to complete over 120 hours of coursework and many times that coursework includes 3 hours or less of a geography-specific course. Pre-service teachers are more than likely to stay in the same state they receive their training in due to certification requirements. Therefore, pre-service teaching training programs could use the results of this study to help inform courses pre-service teachers are likely to take with consideration of the geography knowledge they will have to eventually teach in that state.

The same attentiveness could be done for in-service professional development workshops. Aligning face-to-face workshops with the state standards would allow for a deeper understanding of geographic concepts and better probability that the intended curriculum will become the enacted curriculum.

Value for Development of Learning Materials and Textbooks

Teachers in geography have become reliant on textbooks and learning materials to help them teach geographic material. These materials can be developed locally, state specific, or nationally; ultimately whatever teachers can access for free are useful no matter who developed it or where. This study provides those who develop learning materials a way to develop high-quality, appropriate, and useful learning materials. Using the results of this study, learning materials can be tailored to each state based upon what content is required in their standards. For example, in the state of South Dakota, learning materials that deal with physical geography, human and cultural geography, or human and environment interactions are not of much use to a fourth-grade teacher, but lesson plans on places and regions would be highly beneficial and used.

This study can also serve as a marketing tool for textbooks companies. Major textbook companies often develop a national edition of a textbook that is intended for mass adoption and follow a general framework (usually regionally- or conceptually-based). As this study suggests, each state is different and therefore a national textbook may include information not correlated to the state social studies standards. Textbook companies can use the results of this study to develop supplemental guides or workbooks that accompany the textbook and are state-specific. This would be another resource teachers can rely on that aligns major components of the educational system.

Value for Assessments

Once the intended curriculum is aligned from national and state geography standards, and well-trained teachers can teach the standards through aligned instructional materials and textbooks, the last part of alignment involves the tested curriculum. Teachers are aware of the importance of correlating assessments to the taught and written curriculum; however, national and state assessments are still lacking in alignment. This study provides the first step in providing a deeper examination of the alignment between state geography standards and the state geography assessment. It also provides the opportunity for state geography framework writers at the state level to correlate state geography standards and the National Assessment of Educational Progress (NAEP) geography assessment. Student outcomes on both of these assessments are low and being able to use the method in this study to examine the alignment index of these frameworks and assessments is a critical next step in enhancing geography teaching and learning in America's schools.

Future Research Opportunities

A similar research analysis of the alignment of standards to assessments should be conducted as a follow-up study, in order to yield valuable information on student learning outcomes. A report by Barton (2009) claims, "it is not just that the content standards cover much too much ground. Typically, tests are not aligned with standards, and even when they are, the breadth is too wide and the depth too shallow" (33). Even Lauren Resnick, an authority on standards and assessments, stated, "the tests are not aligned to their own state standards in all but a very few cases. … Most of the state tests do not test the high level, intellectual demands that we were after when we set up the standards" (Resnick 2006; Barton 2009, 9).

Another future research opportunity would be to look at the National Council for Social Studies (NCSS) *College, Career, and Civic Life (C3) Standards in Social Studies* (2014) and how they have been implemented into state social standards. This research uncovered that some states have already adopted them as the organizing framework and in place of geographic content standards. Determining if states are more inclined to use these standards over the national geography standards would help o guide any future revision of national geography standards.

APPENDIX SECTION

APPENDIX A

Revision and Adoption Dates for Current Social Studies Standards and Scheduled Revision Date

State	Last	Upcoming
Alabama	2010	2020
Alaska	2006	N/A
Arizona	2005	Currently under revision
Arkansas	2014	2020
California	1998	N/A
Colorado	2009	Currently under revision
Connecticut	2015	N/A
Delaware	2016	N/A
District of Columbia	2006	NA
Florida	2008	N/A
Georgia	2016	N/A
Hawaii	2007	Currently under revision
Idaho	2016	N/A
Illinois	2017	N/A
Indiana	2014	2020
Iowa	2017	N/A
Kansas	2013	2020
Kentucky	2015	N/A
Louisiana	2011	N/A
Maine	2007	N/A
Maryland	2015	N/A
Massachusetts	2003	2018
Michigan	2007	Currently under revision
Minnesota	2011	2020/2021
Mississippi	2010	Currently under revision
Missouri	2016	2019/2020
Montana	2000	2019
Nebraska	2012	2019
Nevada	2017	N/A
New Hampshire	2006	Currently under revision
New Jersey	2014	N/A
New Mexico	2009	N/A
New York	1996	N/A
North Carolina	2010	N/A
North Dakota	2007	2018/2019
Ohio	2010	2018
Oklahoma	2012	N/A
Oregon	2011	Currently under revision
Pennsylvania	2009	N/A

Rhode Island	2012	N/A
South Carolina	2011	2019
South Dakota	2015	N/A
Tennessee	2013	Currently under revision
Texas	2010	2019
Utah	2010 (K-6) & 2017 (7-12)	N/A
Vermont	2017	N/A
Virginia	2015	N/A
Washington	2008	N/A
West Virginia	2016	N/A
Wisconsin	1998	Currently under revision
Wyoming	2014	N/A

APPENDIX B

K-12 Social Studies Taxonomy

K-12 Social Studies Content Areas

100	Social Studies Skills
200	Human Culture
300	Innovation and Cultural Change
400	Multicultural Diversity
500	Social Problems
600	Foundations of Government
700	Principles of American Democracy
800	American Constitutionalism
900	Political and Civic Engagement
1000	Limited Resources and Choice
1100	How Markets Work
1200	Economic Systems
1300	Economic Interdependence
1400	Personal Finance
1500	Map Skills

1600	Places and Regions
1700	Physical Geography
1800	Human and Cultural Geography
1900	Human/Environment Interactions
2000	The Uses of Geography
2100	State History
2200	US History (People, Events, and Documents)
2300	US History (Growth and Development)
2400	US History (Other Themes)
2500	World History (Pre-History)
2600	World History (Early Empires and Religions)
2700	World History (Emergence of the Global Age)
2800	Psychology
2900	Sociology

Other Coding Conventions

Topics:

0	All
999	Out of Subject Area

Cognitive Demands:

B	Recall/Memorize
C	Process Information
D	Demonstrate Understanding
E	Analyze/Hypothesize
F	Synthesis/Evaluate
Z	Non-Specific Cognitive Demand

K-12 Social Studies Taxonomy

100	**Social Studies Skills**
101	Chronological and historical thinking
102	Deductive and/or inductive reasoning
103	Causality and unpredictability
104	Developing a reasonable argument
105	Research, analysis, and interpretation
106	Data collection (collect data, gather information)
107	Data interpretation
108	Bias, opinion, and perspective (credibility, point of view)
109	Issue analysis and decision making
110	Use of primary sources (artifacts and documents)
111	Use of secondary sources
112	Cause and effect
113	Compare and contrast
114	Conflict management
115	Work cooperatively in groups
116	Formulating a question or topic
190	Other
200	**Human Culture**
201	Enculturation
202	Kinship patterns and descent
203	Social stratification (e.g., caste and class)
204	Influence of social class
205	Subcultures within the dominant culture
206	Language and communication
207	Characteristics of culture
208	Contributions
209	Cooperation, conflict, and interdependence
210	Belief system
211	Individual identity
290	Other
300	**Innovation and Cultural Change**
301	Invention and the role of technology
302	Individual will and social influence
303	Cultural diffusion
304	Adaptation
305	Acculturation
306	Assimilation
307	Extinction
390	Other
400	**Multicultural Diversity**
401	Ethnocentrism and cultural relativity
402	Race, ethnicity, and religion
403	Pluralism
404	Diversity
405	Gender
490	Other

500	**Social Problems**
501	Poverty, hunger, and homelessness
502	Crime, delinquency, and prisons
503	Drug, alcohol, and substance abuse
504	Discrimination and prejudice
505	Slavery
590	Other
600	**Foundations of Government**
601	The need for government (e.g., conflict resolution, collective decision-making, and national security)
602	Forms of government (e.g., monarchy, dictatorship, theocracy, democracy, or oligarchy)
603	Political theory (e.g., Hobbes, Locke, and Marx)
604	Fundamental political concepts (e.g., legitimacy, power, authority, responsibility, rule of law, sovereignty, and compromise)
605	Meaning of democratic theory
606	International Systems (e.g., UN, EU, NAFTA, WTO)
607	International Relations
690	Other
700	**Principles of American Democracy**
701	Limited government
702	Republicanism
703	Majority rule vs. minority rights
704	Federalism
705	Separation of powers
706	Checks and balances
707	Popular sovereignty
708	Individual rights
709	Common good
710	Diversity
711	Equality
712	General welfare
713	Liberty
714	Patriotism
715	Self-Government
716	Justice
717	Civic virtue
790	Other

800	**American Constitutionalism**
801	Foundation documents (e.g., Magna Carta, Declaration of Independence, and Federalist Papers)
802	Electoral process
803	Legislative powers and functions
804	Judicial powers and functions
805	Executive powers and functions
806	Basic content and structure of the U.S. Constitution: limited government, enumeration and separation of powers, federalism, and republicanism
807	Interpretation of the Constitution
808	Amendments of the Constitution
809	Relationships among various branches of the government (i.e., checks and balances)
810	Landmark Supreme Court cases (e.g., Marbury v. Madison, Brown v. Board, and Miranda v. Arizona)
811	State and local government (e.g. county, tribal, town)
812	Individual rights and responsibilities
813	Due process (e.g., substantive and procedural)
814	Equal protection
890	Other
900	**Political and Civic Engagement**
901	Political participation
902	Citizens' rights and responsibilities
903	Debate and issues clarification
904	Political constituencies
905	Political activism
906	Civil disobedience
907	Polls, bias, and spin
908	Political orientation (e.g., liberal, moderate, and conservative)
909	Public service
910	Volunteerism
911	Non-constitutional political institutions (e.g., political parties, interest groups, media, and public opinion)
912	Informed citizenry
913	Public policy (local, state, national, international)
914	Social Institutions
990	Other
1000	**Limited Resources and Choice**
1001	Choice (e.g., wants vs. needs)
1002	Investing
1003	Opportunity cost
1004	Productive resources (e.g., natural, human, capital, entrepreneurship)
1005	Scarcity
1006	Spending
1090	Other

1100	**How Markets Work**
1101	Competition (e.g., perfect, lack of)
1102	Supply and Demand
1103	Exchange
1104	Incentive
1105	Circular flow
1106	Market failure (e.g., externalities)
1107	Money
1108	Price
1109	Productivity
1110	Substitute and complementary goods
1111	Public and private goods
1112	Risk
1113	Role of government (e.g., taxes and regulation)
1114	Goods and services
1115	Profit
1190	Other
1200	**Economic Systems**
1201	Stock market
1202	Basic economic questions
1203	Command economy
1204	Consumption
1205	Banking system (e.g., central bank)
1206	Economic development
1207	Distribution
1208	Market economic system
1209	Fiscal policy
1210	Monetary policy
1211	Production
1212	Societal goals (e.g., equity, freedom, growth, security, and stability)
1213	Traditional economic system
1214	Mixed system
1215	Gross domestic product
1216	Economic indicators (e.g., unemployment, inflation, and CPI)
1290	Other

1300	**Economic Interdependence (Globalization)**
1301	Balance of systems
1302	Trade (e.g., free trade, barriers to trade, subsidies, tariffs, quotas, and embargoes)
1303	Comparative advantage
1304	Exchange rates
1305	Interdependence
1306	International aspects of growth and stability
1307	Money
1308	Specialization
1309	Voluntary exchange
1310	Sustainability
1311	Foreign aid (state)
1390	Other
1400	**Personal Finance**
1401	Money management/budgeting
1402	Credit and interest
1403	Financial planning
1404	Job skills
1405	Income
1406	Taxes
1407	Entrepreneurship
1408	Investing
1409	Banking and financial institutions
1410	Insurance
1411	Savings and borrowing
1490	Other
1500	**Map Skills**
1501	Diagrams, graphs, models, maps, globes, and atlases
1502	Photographs, aerial photos, and satellite imagery
1503	Map properties (e.g., size, shape, distance, and direction)
1504	Map elements (e.g., title, scale, symbols, and legend)
1505	Direction (e.g., cardinal points, magnetic, and polar)
1506	Location (e.g., latitude, longitude, absolute, and relative)
1507	Location of features on the earth (e.g., continents, countries, states, cities, mountains, oceans, and rivers)
1508	Spatial organization (e.g., pattern, hierarchy, distribution, linkage, and accessibility)
1509	Movement and spatial interaction
1510	Mental maps (creation and use of)
1511	Geospatial technologies (e.g., geographic information systems and global positioning systems)
1590	Other

1600	**Places and Regions**
1601	Physical characteristics of places in the U.S. and the world
1602	Human characteristics of places in the U.S. and the world
1603	Place creation (e.g., meaning and social relations)
1604	Place and identity (e.g., personal, community, ethnic, national, regional, and global)
1605	The concept of regions and regionalization
1606	Types of regions (formal, functional, and perceptual)
1607	The influence of culture and experience on people's perceptions of places and regions
1690	Other
1700	**Physical Geography**
1701	Climate, world climate regions, and major biomes
1702	Earth/sun relationships and the seasons
1703	Weather and weather systems
1704	Formation of and change to landforms
1705	The hydrologic cycle (i.e., water cycle)
1706	The oceans
1707	Ecosystems and ecological processes (e.g., global warming and energy)
1708	Physical systems
1790	Other
1800	**Human and Cultural Geography**
1801	Population
1802	Migration
1803	Economic processes and systems
1804	Transportation and communication networks
1805	Trade and movement of ideas
1806	Human settlements and urban systems
1807	Conflict and cooperation over territory
1808	Geo-political systems and interactions
1809	Cultural landscape (e.g., religion, ethnicity, and language)
1810	Locations and characteristics of major culture groups of the world
1890	Other
1900	**Human/Environment Interactions**
1901	Human modification of, and adaptation to, the physical environment
1902	Carrying capacity of environmental systems
1903	Resources and energy use
1904	Pollution and environmental problems
1905	Natural hazards and disasters (e.g., hurricanes, earthquakes, and floods)
1990	Other

2000	**The Uses of Geography**
2001	The spatial perspective
2002	The ecological perspective
2003	Interpreting the past and present
2004	Forecasting and planning for the future
2005	Identifying and solving problems
2006	Connecting self and the world from local to global scales
2007	Patterns of change
2090	Other
2100	**State History**
2101	Indigenous peoples
2102	Early settlement and statehood
2103	Immigration and settlement
2104	Structure of state government
2105	Contemporary times
2106	Geographic, economic, and political influences
2107	Key historic figures
2190	Other
2200	**US History (People, Events, and Documents)**
2201	Indigenous people and cultures of North America
2202	European)
2203	The American Revolution
2204	Revolution and New Nation
2205	Foundational documents of American government (e.g., Articles of Confederation, Declaration of Independence, Constitution, Bill of Rights, other amendments)
2206	Expansion and Reform (e.g., election of 1800, Jacksonian period, and antebellum period)
2207	Causes and consequences of the Civil War (e.g., regionalism and slavery)
2208	Civil War and Reconstruction
2209	Rise of industrial America and cities
2210	The Progressive Era
2211	Causes and consequences of World War I
2212	The Great Depression
2213	The New Deal
2214	Causes and consequences of World War II
2215	Causes and consequences of Cold War (e.g., Korean Conflict and Vietnam conflict)
2216	Rights revolution (e.g., civil rights, women's rights, expansion of civil liberties, and environmental and consumer protection)
2217	Key historic figures
2218	Colonial America
2219	Federal period
2290	Other

2300	**US History (Growth and Development)**
2301	Expansion, innovation, and reform
2302	Expansion of territory (e.g., westward expansion)
2303	Industrial Revolution
2304	Immigration
2305	Emergence of Modern America
2306	Industrialization and urbanization
2307	Nationalism
2390	Other
2400	**US History (Other Themes)**
2401	Cultural, religious, and social reform movements
2402	Social and economic changes
2403	Social Policies (e.g., Federal Indian policies, Prohibition)
2404	Role of art, literature, and music (e.g., Jazz Age, Lost Generation, Harlem Renaissance)
2405	Evolution of foreign and domestic policy (e.g., post- Cold War era, terrorism, and relations with the developing world)
2406	Contemporary United States
2490	Other
2500	**World History (Pre-History)**
2501	Beginnings of human society and early civilizations
2502	Emergence of civilizations (e.g., Ice Age, hunting and gathering societies, and development of agriculture)
2503	Development of early civilizations (e.g., Hittites, Nubians, Meso and South America, Egypt, and Mesopotamia)
2590	Other
2600	**World History (Early Empires and Religions)**
2601	Rise of world religions and the great empires
2602	Early empires (e.g., Persian, Greek, Roman, and Asian empires)
2603	Eurasian thinkers (e.g., Chinese, Indian, and Greek)
2604	Religions (e.g., Christianity, Islam, and Buddhism)
2605	Global encounters, exchanges, and conflicts
2606	Periods)
2607	Interactions between Christendom and the Muslim World
2608	Interactions through regional and overseas exploration and trade (e.g., Mongol Empire, African kingdoms, Marco Polo, exploration of the Americas)
2609	Patterns of crises (e.g., weather and plague)
2690	Other

2700	World History (Emergence of the Global Age)
2701	Expansion of overseas exploration and trade
2702	Convergence of cultures (e.g., ecological revolution)
2703	Renaissance, Reformation, and political revolutions in Europe
2704	An Age of Empires and Revolutions
2705	Political, agricultural, industrial, and scientific revolutions
2706	Nationalism, imperialism, and expansion of trade-based empires
2707	Western dominance and global empires
2708	Causes and consequences of global wars (e.g., World War I, World War II, the Holocaust, United Nations)
2709	Global politics (e.g., Cold War, Communist China, independence movements in Africa, nation building, balkanization of states)
2710	Civil Society (e.g., immigration, civil rights, ethnic and religious conflicts, advances in science and medicine)
2711	Rise of global economy (NAFTA, EU)
2712	Key historic figures
2790	Other
2800	**Psychology**
2801	Scientific method
2802	Behavior (ie. Anti-social, altruistic, obedient)
2803	Ethical issues
2804	Human development
2805	Cognitive development
2806	Moral development
2807	Brain function and structure
2808	Memory and learning
2809	Mental health (ie. Disorders)
2810	Personality
2811	Perceptions and attitudes
2812	Heredity
2813	Identity
2890	Other

2900	Sociology
2901	Socialization
2902	Norms and values
2903	Conformity and non-conformity
2904	Sociological research
2905	Cultural diversity
2906	Group behavior
2907	Social groups
2908	Deviance
2909	Human interaction
2910	Cultural patterns
2911	Social institutions (eg. religious, educational, familial, economical, political)
2912	Stereotypes
2913	Social structure
2914	Collective behavior
2915	Social problems
2916	Social movements
2917	Conflict resolution
2918	Cultural assimilation
2919	Cultural preservation
2990	Other

Cognitive Demand Categories for Social Studies

B	C	D	E	F
Recall / Memorize	**Process Information / Investigate**	**Demonstrate Understanding / Apply**	**Analyze / Hypothesize**	**Synthesize / Evaluate / Make Connections**
Name, Identify, List, Recognize, Label	Make observations	Describe, explain social studies issues/problems	Classify and compare data	Propose or evaluate solutions to social problems
Recall facts, terms, definitions	Locate and collect information/data	Explain procedures and methods of inquiry	Analyze data, recognize patterns / relationships	Use social studies concepts to solve problems
Locate features on a map	Read, decode, and interpret maps/graphics	Recognize & explain misconceptions	Process and interpret data	Infer from data, draw conclusions
Identify people, places, events, dates	Conduct Interviews/fieldwork	Explain the reasoning in making decisions	Identify bias, points of view, frame of reference	Use multiple sources to make connections
	Use data collection tools/procedures	Design effective displays of information/data	Make predictions	Make decisions, form judgements
	Display data in tables or charts			Develop new hypotheses
	Summarize, classify, organize data			Assess accuracy, credibility, relevance
	Paraphrase, convert, translate information			Plan effective research strategies
	Generate questions			

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