



**A Review of the 2016 Draft New York State  
English Language Arts and Mathematics Learning  
Standards**

*Submitted by Achieve at the request of The Education Trust–New York  
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## Introduction

This report details a review of New York State’s 2016 draft English Language Arts (ELA) and Mathematics Learning Standards (“NYSELALS” and “NYSMLS,” respectively) to determine whether they are high-quality standards that prepare all students, over the course of their K–12 education, for success in credit-bearing college courses and quality, high-growth jobs.

The Education Trust—New York requested that Achieve perform a technical review of the draft standards and provide substantive feedback in a manner that may be useful to the drafters. Achieve is an independent, nonpartisan, nonprofit education reform organization dedicated to working with states to ensure states develop and maintain high academic standards, raise graduation requirements, improve assessments, and strengthen accountability so that all students graduate from high school prepared for their next steps. Created in 1996 by a bipartisan group of governors and business leaders, Achieve is one of the nation’s premier experts on K–12 academic standards in literacy, mathematics, and science.

Achieve evaluated the proposed draft standards in both subjects using criteria and procedures Achieve has developed and refined to evaluate academic standards for more than 30 states over nearly 20 years. Achieve has also used similar methods for comparing standards in 15 countries. When evaluating state standards, Achieve uses six distinct criteria: rigor, focus, coherence, specificity, clarity/accessibility, and measurability, and compares the standards under review with the best, evidence-based state college and career ready standards. New York’s current standards, as well as state standards in over 40 states, are based on the Common Core State Standards (CCSS), which serve as the comparison benchmark for Achieve’s review. As a result, the analysis presented here describes how the draft NYSELALS and NYSMLS relate to the current NY standards.

## Key Findings and Recommendations

The following findings summarize Achieve’s evaluation of the draft NYSELALS and NYSMLS. The discussion below highlights key findings and recommendations using Achieve’s Criteria for Quality Standards: rigor, coherence, focus, specificity, clarity/accessibility, and measurability. The recommendations, summarized below and throughout this report and the accompanying side-by-side charts in each subject, also suggest improvements that should be considered before final submission of the NYSELALS and NYSMLS to the Board of Regents for adoption. Overall, New York’s draft standards reflect skills necessary for college and career readiness, however there are issues of clarity that will need to be addressed in the next version. Additionally, the draft standards for ELA contain issues pertinent to text complexity and rigor; if these are not addressed the ELA standards would not prepare students for college and a career.

### **With respect to New York State Mathematics Learning Standards (NYSMLS):**

- 1. The NYSMLS are generally rigorous, coherent, and focused and with some revision will be on a par with other sets of college- and career-ready standards.**

The proposed 2018–19 New York mathematics standards are similar in rigor, coherence, and focus to the existing NY standards, with a few exceptions. Details of those exceptions can be found in this report and in the side-by-side chart and commentary. In some cases, New York has improved clarity in ways that other states can learn from, but in other instances it is recommended that additional clarity be considered for the final version.

- 2. There is neither front matter nor grade-level introductions included in this draft.**

Although found in the current New York standards, the draft NYSMLS do not include front matter or grade-level introductions. As such, they are missing information about the areas of focus for each grade level, which guide teachers in their curricular choices. They also lack information on the purpose of the Plus standards. Since NYSED requires only three high school math credits for a Regents diploma, it is not clear how, or if, any of the Plus standards would be used. At a minimum, New York will need to indicate which students will see which standards.

- 3. There are several issues of clarity in the NYSMLS.**

Throughout the NYS content standards, there are changes in wording from the existing NY standards. In some cases, the changes make the standard’s expectation more clear. [For example see commentary for 5.NF.B.4b.] However, in many other cases, the changes resulted in a loss of clarity, such as through the added requirement of using *only parenthesis* in 5.OA.A.1 as students are to “[a]pply order of operations to evaluate numerical expressions involving only parentheses and/or the

four operations.” There are also issues of clarity in the glossary, such as in the definition of *fluency*. For full details, see the section on Clarity in this report as well as the comments in the accompanying side-by-side chart. Achieve recommends that New York review these issues closely to ensure that clarity is improved in the final version.

**4. There are some issues with measurability that need to be resolved.**

New York is to be commended for creating a glossary of various verbs found in the standards. However, in a few cases, such as with the definition of *explore*, this has resulted in standards that will be more challenging to measure. In F-BF.B.7, for example, students are to “[e]xplore the derivation of the formulas for arithmetic and finite geometric series.” This is clearly less measurable than the existing expectation for students to *derive* the formula for the sum of a finite geometric series. Additionally, the NYSMLS have separated some standards without attending to the sentence structure, leaving some standards that are not full sentences or are defining statements and cannot be measured.

**5. There is a marked need for a glossary of terms other than verbs.**

The Glossary of Verbs, attached to the content standards documents, is only partially helpful. While the glossary includes one term that is not a verb (fluency), there is a need to more clearly define other mathematical terms (e.g. congruent, similar) used in the standards. In a few cases, definitions are included as part of a standard, but in others there is no definition provided at all. An additional glossary, or an extension of the current one, to include terms other than verbs, is needed.

**With respect to New York State English Language Arts Learning Standards (NYSELALS):**

**1. The draft NYSELALS prioritize vocabulary acquisition, building and relaying knowledge from text, and using evidence from text.**

The draft NYSELALS make it clear that the three critical instructional shifts for college and career readiness, i.e., building knowledge, drawing evidence from texts, and developing academic vocabulary are valued. Scores of reading research point to vocabulary being a key component to text comprehension. Knowledge is how students build cognitive bridges from one concept to another. College and workplace reading and writing require the use of evidence in defense of inferences and ideas. With a few exceptions in grades 3–5, New York has done an exceptional job in including these elements and clearly articulating their importance.

**2. The draft NYSELALS, for the most part, progress appropriately from grade to grade; however, there are occasions where the progression is unclear and could be improved.**

In most places the progression of expectations among standards is clear, but as evidenced in R.11 and other standards, there are some places where the progression is weak. One example of

progression concern is reading standard 8. 2.R.8 requires that students “Explain how the reasons support specific points the author makes in a text.” In grades 2–4, students are essentially executing the same skill: understanding the points an author makes and explaining how the reasons or evidence the author uses supports those points. The accompanying side-by-side charts identify additional progression weaknesses in the “Coherence” category.

**3. Draft NYSELALS lack direction with regard to the expected complexity levels of text students should read regularly throughout the grades. As a result, the standards do not adequately prepare students for the reading demands of college and the workplace.**

In 2006, research conducted by ACT, Inc. concluded, “performance on complex texts is the clearest differentiator in reading between students who are likely to be ready for college and those who are not.”<sup>1</sup> To be considered a set of standards that meet the demands of college and careers, standards must include a staircase for text complexity from grades K–12 to ensure that students leave twelfth grade ready for postsecondary reading demands. Rather than expectations for text complexity, the NYSELALS have only a placeholder for Reading Standard 10 in grades K–12 which reads “Text complexity standard to be moved to supporting guidance.” No supporting documentation was provided for review. At this time, it is unclear how New York is defining text complexity, whether the supporting guidance will be officially adopted with the standards and whether that guidance will hold the same force as the standards.

To increase the likelihood that students are prepared by graduation to meet the reading demands of college and the workplace, the overwhelming majority of texts (but certainly not all) that students read during the school year should fall within the acceptable quantitative range of grade-band complexity. This helps prepare all students for the reading demands of college and the workplace. Reading grade-appropriate complex text with the support of a teacher provides students opportunities to develop the skills necessary to navigate the kinds of texts they will encounter in college and the workplace. However, students who are not exposed to grade-level complex texts will never catch up and will never acquire the skills they need to be successful in college and the workplace. Struggling readers can also benefit by spending some of their time reading leveled texts—especially on topics of individual interest—to rapidly build their vocabularies and knowledge about the world.

Part of the reason educational standards exist is to ensure parity between classrooms and across schools and districts. By articulating clear standards that are not open to wide differences of interpretation, states have the mechanism to ensure that every student in every classroom builds the skills that he or she needs for success in the next grade level and for success in future college and

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<sup>1</sup> ACT, Inc. (2006). Reading between the lines: What the ACT reveals about college readiness in reading. Iowa, City, IA: Author.

career endeavors. Put simply, the failure of the NYSELALS to explicitly address text complexity is a matter of equity in regards to preparing students for postsecondary success.

Interestingly, New York omitted text complexity from the ELA standards, but continued to address it well in the literacy standards for history, science, social studies, and technical subjects (NYLSHSST). New York is commended for having expectations for text complexity in the draft NYLSHSST, but also encouraged to address text complexity in the ELA standards in a similar manner. Failure to do so will cause confusion among educators who are being given conflicting guidance for difference subjects and could lead to educators in ELA choosing texts that are not sufficiently challenging.

**4. The draft NYSELALS sometimes lower the expected levels of rigor when compared to the previous standards.**

While some of the standards retain high expectations for students, there are places in grades 1–12 of the draft NYSELALS that have a lower expectation of rigor than what would be demanded in college- and career-ready standards. Sometimes, the standard is written so that it expects students to demonstrate a superficial level of understanding (e.g., 6.R.6<sup>2</sup>); other times, the standard removes specific examples of expectations which again reduces rigor (e.g., 8.R.4<sup>3</sup>).

**5. The draft NYSELALS combine reading literary texts and informational texts into one strand, “Reading.” While the combination could be beneficial for educators, it is difficult to follow in its current form.**

The content of the reading standards is inconsistently organized: Sometimes the revised reading standard begins with expectations in literature; other times it begins with expectations for informational text. Sometimes the expectations for different types of text are not identified. As such, the suite of reading standards is consistently unclear and difficult for the reader to follow.

**6. In many instances, the draft NYSELALS have made the language less clear to educators.**

While some of the revisions attempt to streamline the language in the standard, oftentimes the new version makes the standard less clear. In every grade, K–12, clarity was flagged as a potential issue, and generated more comments than any of the other criteria used for evaluation. Standards that are

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<sup>2</sup> “6.R.6: Determine an author’s perspective and purpose in a text and explain how it is conveyed. In literary texts, determine the narrative point of view and explain how it conveys meaning.” Instead of explaining the point of view, the narrator, or speaker in a text or explaining how the point of view in developed through the text, the revised standard has students simply identifying the point of view, which could be 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> person and then explaining how that point of view conveys meaning. This reflects a lowered level of rigor.

<sup>3</sup> “8.R.4: Determine the technical, connotative, and figurative meaning of words and phrases, as they are used in both literary and informational texts, on meaning or tone/mood. Analyze the impact of specific word choice when making comparisons between two texts, such as poetry, stories, drama, or other genres of texts.” The revision omitted the references to analogies or allusions to other texts, which is an important element of vocabulary development students should pay attention to.

not clear to educators run the risk of being interpreted differently, and providing students with unequal access to the level of rigor the standard intends.

In light of these findings and a comprehensive analysis of the draft NYSELALS, Achieve recommends the following:

### **Recommendations**

- **New York should clearly define expectations for text complexity in the ELA standards in one or a combination of several methods:**
  - Including a form of reading standard 10, or one that calls on students to read grade-level texts backed up by an appendix which is adopted with the standards that clearly defines the quantitative measures of text complexity for each grade level or within a grade band of one-to-two years (e.g., grades 2 and 3, or grades 6 through 8, 9–10, and 11–12). In addition, the appendix should outline the qualitative measures and how the quantitative and qualitative measures should work together to place a text to an appropriate grade level. This method will clearly establish statewide expectations for the texts students have regular opportunities to read and comprehend during the school year.
  - Inserting a phrase in every reading standard that articulates the expectation that the standard is practiced on grade-level text (e.g., “on grade \_\_\_\_ texts” as determined by a quantitative and qualitative analysis). This method will clearly weave the importance of text complexity expectations throughout the standards. An appendix would be needed to clearly define the quantitative and qualitative measures of text complexity for elementary through high school.
  - Providing a suggestive or illustrative reading list of appropriately complex literary and informational text at each grade/band. This method will ensure that common texts of the appropriate complexity are taught statewide.
  - Including examples within the reading standard themselves. For example, in addition to defining text complexity bands the standards could include specific requirements regarding the kinds of grade-level appropriate texts that students should read and have access to, including plays by Shakespeare and an American dramatist as well as seminal U.S. documents of historical and literary significance (e.g., the Declaration of Independence and early nineteenth-century foundational works of American literature). This method will provide sample expectations to educators.
  
- **New York should develop one standard way to present the merged literary and informational text reading standards.** In their current form, the reading standards have at least three different structures, making them difficult for the reader to follow. New York should commit to one consistent way to present the reading standards to ease readability.

- **The standards committee may want to consider producing a supplemental glossary with clear, precise, and research-based definitions for key terms (e.g., claim, media, literary text, informational text, and perspective).** The addition of a glossary which defines key concepts to an audience of educators may support educators understanding of the new standards and help increase the chances of developing a commonly understood language statewide. If developed, the glossary, much like the standards, will be read by teachers individually or in small teams; it is critical that the glossary articulate clear, standard, easily understood, and focused definitions that come from respected and academic sources.
- **The draft NYSELALS should be read by the standards revision committee both horizontally and vertically.** New York should conduct a separate vertical articulation of each standard to ensure that students do not experience gaps in instruction and that expectations grow from year to year.
- **The draft NYSELALS should be edited for clarity, grammar, and usage.** New York should reread the standards with a focus on a precision of language. As noted above, clarity of the expectations was noted as a weakness throughout. During the reread, the committee should focus on a guiding question like, “How might the language in this standard be clarified so the standard is not misinterpreted by educators?” Concomitantly, the standards should be formally edited for standard English grammar and usage. Throughout the standards there are instances of misplaced modifiers and other grammar mistakes that may cause additional confusion—certainly understandable as this was a draft.

**With respect to New York State Literacy Standards for History/Social Studies, Science, and Technical Subjects (NYLSHSST):**

**1. Draft NYLSHSST reflect a continued commitment to teaching content-area literacy.**

New York State is to be recognized for maintaining a commitment to content-area literacy which is crucial in grades 6–12. According to the findings of the National Institute for Literacy (2007), in its report, “What Content-Area Teachers Should Know About Adolescent Literacy” ([https://lincs.ed.gov/publications/pdf/adolescent\\_literacy07.pdf](https://lincs.ed.gov/publications/pdf/adolescent_literacy07.pdf)), a school-wide approach is imperative for adolescents to achieve high levels of skill with reading and writing. New York is commended for maintaining a focus on cross-content literacy expectations, important skills for college and the workforce.

**2. Draft NYLSHSST retain a commitment to the importance of text complexity by providing expectations for reading in each grade band.**

Text complexity is critical to preparing students for college and careers. The draft NYLSHSST are recursive, and aim for depth of understanding rather than just breadth of content; as such, what puts students on track for college or the workplace is their ability to read increasingly complex text from grade to grade. In every grade, students read text and analyze it for essential elements including central idea, author’s purpose, and structure. New York has made it clear that students should read independently and proficiently at the high end of the grade band at the end of grades 8, 10, and 12.

**3. Draft NYLSHSST maintain a clear, strong focus on content-area skills in reading (e.g., citing evidence, determining central ideas, acquiring domain-specific vocabulary, integrating knowledge and ideas) and writing in different modes and for different purposes.**

The draft NYLSHSST maintain a clear focus on the key elements of college- and career-preparatory instruction across the content areas. The standards detail important elements of discipline-specific literacy (reading and writing).

**4. Draft NYLSHSST shift from “texts” to “sources” to emphasize the need for graphical/multimedia/quantitative literacy in the content areas. While this is appropriate and essential to content-area learning in history, social studies, science, and technical fields, the shift may mean a less rigorous emphasis on reading content-area print text, which is an essential skill for college and career readiness.**

Recognizing that the “texts” on which content-area learning is based may also include timelines and tables in history, maps in geography, tables and charts in science, or graphs in technical subjects is a valid shift in the NYS literacy standards. Broadening this understanding of “texts”—often renamed as “sources” in the revised standards—is often appropriate and will result in important instruction and learning in the content areas. However, by opening the interpretation of the standards to include either print texts or graphical or multimedia sources, the draft NYLSHSST may have the unintended consequence of lowering rigor and neglecting needed instruction for college and career readiness.

**5. Some specific revisions may create issues of clarity or specificity for users.**

While overall the revisions seek to improve on the clarity of specific standards or to improve coherence with other grade levels and content-area standards, some specific wording in the revisions may create new questions for the educators and students who will be held accountable to the standards. The accompanying side-by-side chart identifies standards where this may be the case. In light of these findings and a comprehensive analysis of the draft NYLSHSST, Achieve recommends the following:

- **New York should clearly articulate the expectations for reading in the text complexity band by providing both quantitative ranges for text and guidance on how to evaluate text qualitatively.** New York should clearly define expectations for text complexity in reading standard 10 in a supplemental appendix or other supplemental material that is adopted with the standards. This should include guidance for both a quantitative analysis by grade band and a process for a qualitative analysis to place text appropriately at a grade level within the grade band.
- **New York should make it clear that students should still read a volume of traditional texts (e.g., articles, research, books) required for a deep understanding of the discipline in order to ensure that students are prepared to meet the informative text demands of college and a career.** If content-area teachers perceive that their role is to teach students to analyze and produce the kinds of graphical sources encountered in their disciplines, but not to read the print texts of their disciplines, students may miss out. As Shanahan and Shanahan (2008) argue in their article, “Teaching Disciplinary Literacy to Adolescents: Rethinking Content-Area Literacy” ([https://www.nesacenter.org/uploaded/conferences/FLC/2015/Handouts/Shanahan\\_HER\\_2008.pdf](https://www.nesacenter.org/uploaded/conferences/FLC/2015/Handouts/Shanahan_HER_2008.pdf)), scholars in different disciplines read texts differently and, consequently, different skills and approaches are needed for comprehension. As they describe, discipline-specific “literacy skills and texts are highly specialized and require actions that are relatively unique... as students move through school, reading and writing instruction should become increasingly disciplinary, reinforcing and supporting student performance with the kinds of texts and interpretive standards that are needed in the various disciplines or subjects” (57). Providing literacy standards is a much-needed element of this effort; ensuring that these standards are employed in service of print-text reading (and not only graphical-source reading) is another key element. Being sure that the standards emphasize a volume of content-area text reading that will be necessary to develop students’ comprehension skills and reading stamina is an important element of the literacy standards.
- **New York should carefully define what is meant by “sources.”** As students will read a diverse body of material in their history/social studies, science, and technical subjects courses, New York should clearly define “sources” to educators, parents, and students. A clear and consistently understood definition will help increase the likelihood that students are held to the same high expectations.
- **Draft NYLSHSST should be read by the standards revision committee both horizontally and vertically.** As a final check, New York should conduct a separate vertical articulation of each standard to ensure that students do not experience gaps in expectations that create gaps in

instruction and that expectations grow from year to year. (Achieve found that the standards logically build across grade bands. This recommendation is to ensure that progression is maintained as NY makes any necessary revisions in the next round.)

## **Review of New York State’s Draft Mathematics Learning Standards Using Achieve’s Criteria for the Evaluation of College- and Career-Ready Standards**

The purpose of this review is to examine the September 2016 draft of the New York State Mathematics Learning Standards (NYSMLS) to determine whether they are high-quality standards that prepare students, over the course of their K–12 education careers, for success in credit-bearing college courses and quality, high-growth jobs. New York has clearly done a great deal of work to thoughtfully produce a highly rigorous set of standards. The expectations intended for all students, up through Algebra II, in the NYSMLS are very similar to other college- and career-ready sets of standards thus enabling educators to easily adapt existing instructional materials. It is important to point out that New York does not require all students to take mathematics through Algebra II in order to earn a high school diploma, and so only some students will benefit from these standards. For the graduating class of 2017, 21 states and the District of Columbia currently either require all students to take Algebra II in order to graduate or set a college- and career-ready course of study as the default graduation pathway, which includes Algebra II. These states tend to have more students taking advanced mathematics courses, and often have smaller gaps in course-taking based on race, ethnicity, or income.

When evaluating standards, Achieve has historically used a set of six criteria: rigor, coherence, focus, clarity/accessibility, specificity, and measurability, and compares the standards under review with the best, evidence-based state college- and career-ready standards. New York’s current standards, as well as state standards in over 40 states, are based on the Common Core State Standards (CCSS), which serve as the comparison benchmark for Achieve’s review, as shown in a set of accompanying side-by-side charts. As a result, the analysis presented here describes how the draft NYSMLS relate to the current NY standards.

### **Analysis of content using Achieve’s Criteria for Quality Standards**

The draft documents provide grade-level standards for each of the grades from prekindergarten<sup>4</sup> through grade 8. In high school, course standards for the first three years are presented as Algebra I, Algebra II, and Geometry. The draft also includes High School Plus Standards that may be used in fourth-year courses. The NYSMLS are structured around domains, clusters, and content standards, with the high school standards also grouped by broader conceptual categories.

The NY Math Practices are bundled in a separate PDF document from the content standards for each grade. In addition, the collection of documents includes a Mathematics Standards Glossary of Verbs

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<sup>4</sup> This analysis focused on grades K through 8 and high school.

Associated with the New York State Math Standards, which contains definitions for the performance verbs used in the NYSMLS.

While the NYSMLS include standards beyond Algebra II, called the NYS Plus Mathematics Learning Standards, the purpose of these standards is unclear. Since none of the content standards in this draft come with an introduction or explanation of their use, it is not clear whether the plus standards are intended to serve as a course on their own. There is no apparent requirement that any courses use any or all of these standards.

**Rigor**

*Rigor refers to the intellectual demand of the standards. It is the measure of how closely a set of standards represents the content and cognitive demand necessary for students to succeed in credit-bearing college courses without remediation and in entry-level, quality, high-growth jobs. Rigorous standards should reflect, with appropriate balance, conceptual understanding, procedural skill and fluency, and applications.*

The NYSMLS place emphasis on the three components of rigor: conceptual understanding, procedural skill, and fluency. There are a few instances, however, where the NYSMLS shifted an understanding, fluency, or application. The NYSMLS in many standards replaced verbs such as *explain*, *understand*, and *use* with *explore*, which is defined in the Glossary of Verbs as an indication that “the topic is an important concept that builds the foundation for progression toward mastery in later grades.” In some cases, it is not clear whether this is an even exchange with respect to rigor, particularly so as the definition of *explore* in the glossary focuses on teacher, rather than student, actions. Three examples are shown in the table below. See the accompanying side-by-side chart for full, and more detailed, commentary.

Below are a few examples of where it is not clear that the level of rigor is a match when an expectation was changed to “explore” in an NY standard:

Current NY Standard	Draft Standard	Comment
K.NBT.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, <b>and record each composition or decomposition by a drawing or equation (e.g., <math>18 = 10 + 8</math>); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.</b>	K.NBT.A.1. <b>Explore</b> composing and decomposing of the numbers from 11 to 19 into ten ones and some further ones, (e.g., by using objects or drawings).	In this case, the required performances (compose and decompose..., record each..., and understand ...) were replaced with “explore.”

Current NY Standard	Draft Standard	Comment
7.G.2. <b>Draw</b> (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	7.G.A.2. <b>Explore</b> geometric shapes <b>through the use of</b> freehand drawings, rulers, protractors, and/or technology. Focus on constructing triangles with given conditions from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	It is not clear whether students are required to draw the figures, or whether they might be asked to look at freehand drawings as part of their exploration.
A-SSE.4 <b>Derive</b> the formula for the <b>sum</b> of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. <i>For example, calculate mortgage payments.*</i>	F-BF.B.7. <b>Explore</b> the derivation of the formulas for <b>arithmetic and</b> finite geometric series. Use the series to solve problems. For example, calculate mortgage payments. ★	Students would not be required to derive the formula, but would explore a derivation instead. This would likely result in decreased rigor.

In order to draw conclusions about rigor (and measurability), the definition of explore will need to be more clearly defined beyond what is in the glossary.

In a few K–8 cases, a clear reduction of rigor is brought about by a change in expectation or limits in a standard. Examples can be found below:

Current Standards	Draft NYSMLS	Comment
2.OA.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem*. [*See Glossary, Table 1.]	2.OA.A.1b. Use addition and subtraction within 100 to <b>develop an understanding of</b> solving <b>two-</b> step problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	This requires that students “develop an understanding of solving two-step problems,” making it not clear whether they actually have to solve them.
3.MD.1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and	3.MD.A.1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve <b>one-step</b> word problems involving addition	The revised standard limits these problems to “one-step.”

Current Standards	Draft NYSMLS	Comment
subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	and subtraction of time intervals in minutes (e.g., by representing the problem on a number line diagram). <b>Note: This includes one-step problems that cross into a new hour as well as those that cross the a.m./p.m.</b>	
6.EE.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; <b>write</b> an equation to express one quantity, <b>thought of as</b> the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.	6.EE.C.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; <b>given</b> an equation to express one quantity, <b>identify</b> the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and given the equation $d = 65t$ to represent the relationship between distance and time.	This current standard requires that students write an equation, while the revised version implies that the student only identify the dependent variable when given an equation.

And in a few cases, draft NYSMLS have made changes that appear to increase rigor, such as in the following example:

Current NY Standard	Draft Standard	Comment
2.NBT.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	2.NBT.B.5a. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; <b>illustrate or explain the strategy and reasoning used.</b> <b>Note: Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies.</b>	A requirement for students to illustrate or explain the strategy has been added.

The draft NYSMLS mention *fluency* more often than the current standards,<sup>5</sup> adding fluency requirements to standards that were not specifically identified as such. A measurable definition of fluency is difficult to create and it is noteworthy that the draft NYSMLS attempt to do this in the Glossary of Verbs. The definition is troublesome, however, when applied to certain standards. In several elementary standards, part of the glossary definition, “a mixture of just knowing some answers, knowing some answers from patterns and knowing some answers from the use of strategies,” is added and in some cases included as part of the performance objective. Examples with commentary are below:

NYSMLS	Comment
<p>K.OA.A.5. Fluently add and subtract within 5. <b>Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies.</b></p>	<p>NYS added an explanation of fluency to the standard, presumably for the teacher. The usage here seems to imply that students should think of some elements of adding and subtracting within 5 in different ways. Is it allowable, for example, that students "just know" all of these? This distinction matters for measurability purposes. Also the explanation, itself, should be in parentheses or added as a "note," as is the case in other NYS. (See 1.OA.C.6b, 2.OA.B.2a, 2.NBT.B.5a, etc.). As it is, it appears to be part of the performance objective.</p>
<p>1.OA.C.6b. Fluently add and subtract within 10. <b>Note: Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies.</b></p>	<p>NYS added the definition of fluency (presumably for the teacher) to this standard. In this case it is not clear how this particular fluency requirement would be relevant, since in this case "just knowing" is the goal. Using patterns and strategies would not be useful or expected.</p>
<p>2.OA.B.2a. Fluently add and subtract within 20 using mental strategies. <b>Strategies could include counting on; making ten (e.g., <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>); decomposing a number leading to a ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math>); using the relationship between addition and subtraction (e.g., knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>); and creating equivalent but easier or known sums (e.g., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 =</math></b></p>	<p>NYS added an explanation of the mental strategies expected and a definitive note to the teacher regarding fluency. In this case the fluency note appears to contradict the standard, itself, since "the use of strategies" is the only fluency method called for.</p>

<sup>5</sup> See 8.EE.C.8b, A-SSE.A.1b, A-SSE.A.2b, A-APR.A.1, A-APR.D.6, F-IF.A.3b, F-IF.C.7a, G.CO.D.12, G.SRT.B.5, G.GPE.B.4, G.GPE.B.5, G.GPE.B.7.

NYSMLS	Comment
<p>13).  <u>Note:</u> Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies.</p>	
<p>2.NBT.B.5a. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; <i>illustrate or explain the strategy and reasoning used.</i>  <u>Note:</u> Fluency involves a mixture of just knowing some answers, knowing some answers from patterns, and knowing some answers from the use of strategies.</p>	<p>The added note to the teacher related to fluency does not make sense here, since this standard addresses only strategies and not a mixture of other ways of "knowing."</p>

The key shifts, referenced in the glossary, refer to *procedural skills and fluencies*. These are often read as being the same thing. Given the difficulty in applying the definition of fluency to many of the standards, this revision process may provide an opportunity to draw a distinction between standards that target procedural skills and those that target fluencies.

**Coherence**

*Coherence refers to how well a set of standards conveys a unified vision of the discipline, establishing connections among the major areas of study and showing a meaningful progression of content across the grades, grade spans, and courses.*

The coherence of the draft NYSMLS is very similar to that found in the current standards. There are a few subtle differences between the two sets, however. Below are examples of potential coherence issues in the draft NYSMLS:

Current NY Standard	Draft Standard	Comment
<p>4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p>	<p>4.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>Note: This standard is limited to <math>n</math> groups of a fraction (where <math>n</math> is a whole number). For example, 4 groups of <math>1/3</math>; which lends itself to being thought about as repeated addition.</p>	<p>A note to clarify the limitations for this standard was added. The note is mathematically troublesome in that it departs from multiplication as it is understood in 4.OA, and contradicts the subparts of the standard. Note also that 3.OA.2 does not mention "repeated addition" (nor does any standard) but speaks of 5 times 7 as 5 groups of 7 objects each. Should students think of 4 times <math>1/3</math> as 4 groups of <math>1/3</math> object each?</p>
<p>8.EE.6. Use similar triangles to explain why the slope <math>m</math> is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation <math>y = mx</math> for a line through the origin and the equation <math>y = mx + b</math> for a line intercepting the vertical axis at <math>b</math>.</p>	<p>8.EE.B.6. Derive the equation <math>y = mx</math> for a line through the origin and the equation <math>y = mx + b</math> for a line intercepting the vertical axis at <math>b</math>. Explore similar triangles to explain why the slope <math>m</math> is the same between any two distinct points on a non-vertical line in the coordinate plane.</p>	<p>NYS changed the order of the statements and changed "use" to "explore." In this case simply replacing "use" with "explore" is awkward. Is it possible to "explore... to explain why?" Perhaps it should be, "explore ... and explain why." This ordering also changed the emphasis of the progression that existed in the earlier standards. The point of the existing standard was to use the earlier work on similarity, connect it to slope, and proceed to the form <math>y = mx + b</math>. This development is outlined in the progressions documents and also reflects the emphasis of the cluster to connect linear equations to proportional relationships. The note indicates the goal is to emphasize the connection to proportional relationships, but the re-phrasing will likely have the opposite impact.</p> <p>Also: "Explore similar triangles," given the glossary definition of "explore" does not make sense here, as students have already learned about similar triangles in Grade 7.</p>

Current NY Standard	Draft Standard	Comment
<p>8.G.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that <b>exhibits</b> the congruence between them.</p>	<p>8.G.A.2. <b>Know</b> that a two-dimensional figure is congruent to another if the <b>corresponding angles are congruent and the corresponding sides are congruent. Also</b>, understand that <b>the image can be obtained from the pre-image</b> by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that <b>maps</b> the congruence between them.</p>	<p>The definition of congruence has changed. Previously, congruence was defined by transformations. In the draft, it is defined by relationships between corresponding angles and sides. In high school, the NYS returns to the previous definition.</p>
<p>8.G.4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that <b>exhibits</b> the similarity between them.</p>	<p>8.G.A.4. <b>Know</b> that a two-dimensional figure is similar to another if the <b>corresponding angles are congruent and the corresponding sides are in proportion. Also</b> understand that <b>the image can be obtained from the pre-image</b> by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that <b>maps</b> the similarity between them.</p>	<p>NYS changed the definition of similarity. Similarity was defined by transformations. In the draft it is defined by relationships between corresponding angles and sides.</p>
<p>A-SSE.3b Complete the square in a quadratic expression <b>to reveal the maximum or minimum value of the function it defines.*</b></p>	<p>All_A-SSE.B.3b. Factor quadratic expressions by completing the square. <b>For example, the expression <math>x^4 + x^2 + 1</math> can be rewritten as <math>x^4 + x^2 + x^2 + 1 - x^2</math>, which is equivalent to <math>(x^2 + 1)(x^2 + 1) - x^2</math> or it can be rewritten as <math>(x^2 + 1)^2 - x^2</math>.</b></p>	<p>Examples were added to the Algebra II version of this standard but the purpose for completing the square was removed, weakening the coherence with the cluster header.</p> <p>Note that in Geometry completing the square is connected to finding the center (see G.GPE.A.1).</p>
<p>A-CED.4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. <i>For example,</i></p>	<p>Al_A-CED.A.4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. <i>For example, rearrange Ohm's</i></p>	<p>There is no progression for this requirement to the functions addressed in Algebra II.</p>

Current NY Standard	Draft Standard	Comment
<i>rearrange Ohm's law <math>V = IR</math> to highlight resistance <math>R</math>.</i>	law $V = IR$ to highlight resistance $R$ .	
F-IF.7b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.*	AI_F-IF.C.7b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	It is not clear why this concept would be required in Algebra I and not Algebra II, where the graphs of inverse functions (square root and cube root) would be more appropriate.  See the accompanying side-by-side chart for more commentary on this standard.
F-TF.3. (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$ , $\pi/4$ and $\pi/6$ , and use the unit circle to express the values of sine, cosine, and tangent for $x$ , $\pi + x$ , and $2\pi - x$ in terms of their values for $x$ , where $x$ is any real number.	Geo_F.TF.A.3 (+) Use special triangles to determine geometrically the values of sine, cosine and tangent for 30, 45 and 60 degrees. Use the special triangles with the unit circle to find the values for sine, cosine and tangent of 30, 45, 60, 120, 135 and 150 degrees. <i>Note: Side lengths could be given in radical form.</i> Eliminate (+)	This NYS Geometry standard is a partial match with a previous (+) standard. This change may have created a coherence issue: Will students be taking Geometry before Algebra II? If so, how will they use the unit circle?
G-CO.6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Geo_G.CO.B.6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure. Given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent. <i>Note: With rotations, the center of the transformation must be specified.</i>	The definition of congruence was modified in grade 8 to avoid defining congruence through transformations. Either this standard or the grade 8 standard need to be changed to restore coherence.
G-SRT.2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the	Geo_G.SRT.A.2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar. Explain using similarity transformations the	The definition of similarity was modified in grade 8 to avoid defining similarity through transformations. Either this standard or the grade 8 standard need to be changed to restore coherence.

Current NY Standard	Draft Standard	Comment
meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. <b>Note: With dilations or rotations, the center of the transformation must be specified.</b>	

### Focus

*High-quality standards establish priorities about the concepts and skills that should be acquired by students. A sharpened focus helps ensure that the knowledge and skills students are expected to learn are important and manageable in any given grade or course.*

There are a few differences in the alignment between the current standards and the draft NYSMLS. For grade K through grade 8, there are only a few instances of expectations in the draft NYSMLS that are not in the existing standards. The draft NYSMLS, for example, include an increased emphasis on money and patterns. These differences are all found in grade 2 or earlier.

There are only two draft high school standards that have no current counterpart. Both of these standards focus on summation notation and series. Additionally, there are a few instances where the draft NYSMLS adapt an existing Plus standard and address it in non-Plus courses. For example, the draft NYSMLS expect all students to work with the Laws of Sines and Cosines and use special triangles. The draft NYSMLS also address using the unit circle to explain the characteristics of trigonometric functions in Algebra II. These changes raise expectations, but the development of these ideas will also demand significant time.

In some cases, a shift in focus is created by a change in language in a standard. The following table provides examples of subtle differences in focus:

Current NY Standard	Draft Standard	Comment
4.G.2. Classify <b>two-dimensional figures</b> based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. <b>Recognize right triangles as a category, and identify right triangles.</b>	4.G.A.2. Classify triangles <b>based on angle size</b> . Classify <b>quadrilaterals</b> based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.	Classification of triangles "based on angle size" is required. This appears to go beyond the current requirement, which specifically expects recognition of right triangles but not other types of triangles (acute, obtuse, Isosceles, equilateral, right).

Current NY Standard	Draft Standard	Comment
<p>8.EE.8b Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. <i>For example, <math>3x + 2y = 5</math> and <math>3x + 2y = 6</math> have no solution because <math>3x + 2y</math> cannot simultaneously be 5 and 6.</i></p>	<p>8.EE.C.8b. Solve systems of two linear equations in two variables <b>with integral coefficients:</b> graphically, numerically using a table, and algebraically <b>by substitution.</b>  <b>Note: Solving systems algebraically by substitution will be limited to at least one equation containing at least one variable whose coefficient is 1.</b></p> <p>Solve simple cases by inspection <b>fluently.</b> For example, <math>3x + 2y = 5</math> and <math>3x + 2y = 6</math> have no solution because <math>3x + 2y</math> cannot simultaneously be 5 and 6.</p>	<p>The draft standard limits this standard by requiring "integral coefficients," with at least one being 1 for those solved algebraically, and substitution as the only algebraic method. This is a shift in focus. It is not clear what limitations would be placed on the precision of answers for tables or graphs, as estimation has been removed from the standard.</p>
<p>F-IF.5. <b>Relate</b> the domain of a function <b>to</b> its graph and, where applicable, <b>to the quantitative relationship it describes.</b> <i>For example, if the function <math>h(n)</math> gives the number of person-hours it takes to assemble <math>n</math> engines in a factory, then the positive integers would be an appropriate domain for the function.*</i></p>	<p>AI_F-IF.B.5. <b>Determine</b> the domain of a function <b>from</b> its graph and, where applicable, <b>identify the appropriate domain for a function in context.</b></p>	<p>The wording involving the relationship between the domain and the quantitative relationship has changed, which created a change in focus. The cluster is about functions that arise in context, but this standard makes it about the graph, rather than the function itself. The context should drive the conversation about the domain, but that is not the main emphasis here.</p>

In some places in the draft high school NYSMLS, the focus on modeling with mathematics is different from that of the previous standards. This occurs when the modeling indicator (\*) was removed or added in the NYSMLS counterpart.<sup>6</sup> The NYSMLS added the modeling indicator to a few geometry standards as well as statistics standards at the Algebra II level. While some states may be reducing both statistics and modeling, it is good to see the NYSMLS maintain an emphasis on these important topics.

<sup>6</sup> When a modeling indicator is added to a heading for a group of standards, it is assumed that all standards directly under that title would be considered a modeling requirement.

## Clarity/Accessibility

*High-quality standards are clearly written and presented in an error-free, legible, easy-to-use format that is accessible to the general public.*

The absence of supporting information for teachers, including front matter, grade level and conceptual category introductions, and a full glossary, raise concerns about clarity. Of specific concern is the need to help teachers identify the critical areas for each grade level, define mathematical modeling, and use of the Plus standards as they are intended. Consistency in these areas across New York classrooms is essential.

There are a number of other issues of clarity in the standards that should be addressed in the next revision. These issues are comprehensively covered in the accompanying side-by-side chart. The table below highlights some of these:

Current NY Standard	Draft Standard	Comment
K.CC.5. Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, <b>or</b> a circle, <b>or</b> as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects	K.CC.B.5a. Answer counting questions using as many as 20 objects arranged in a line, a rectangular array, <b>and</b> a circle <b>and</b> as many as 10 objects in a scattered configuration, (e.g., “How many _____ are there?”).	The change from "or" to "and" may be taken to mean that the objects must be arranged in all of the ways for each set. This makes the new version of the standard less clear.
K.MD.1. Describe measurable attributes of objects, such as length or weight. <b>Describe several measurable attributes of a single object.</b>	K.MD.A.1. Describe measurable attributes of an object(s), such as length or weight, <b>using appropriate vocabulary (e.g., small, big, short, tall, empty, full, heavy, and light).</b>	The current draft emphasizes describing the attribute. (An object has length, for example.) The new draft includes examples that shift to making claims of quantifying the attributes. Is this an intentional shift? If so, this seems to overlap with K.MD.A.2 in that a claim about "small" requires some sort of comparison to something else. Clarification is needed.
K.G.5. Model <b>shapes in the world</b> by building shapes <b>from components</b> (e.g., <b>sticks and clay balls</b> ) and drawing shapes.	K.G.B.5. Model <b>objects in their environment by using</b> and/or drawing shapes (e.g., <b>using unit blocks to build a simple representation of the classroom</b> ).	The wording in this draft standard is awkward. Should "their" be "the?" It is not clear why "building shapes" was removed, as it clarified what the "model" was to be.  By putting "using" and "drawing" together, NYS put the emphasis on 3-D models. It is not clear how students in

Current NY Standard	Draft Standard	Comment
		<p>grade K would know how to "draw" environmental shapes that are 3-D. The standard changed from "sticks and clay balls," which might be used to build either 2- or 3-D shapes, to "unit blocks," which essentially removed the possibility of 2-D shapes.</p>
<p>3.OA.5. Apply properties of operations as strategies to multiply and divide.* <i>Examples: If <math>6 \times 4 = 24</math> is known, then <math>4 \times 6 = 24</math> is also known. (Commutative property of multiplication.) <math>3 \times 5 \times 2</math> can be found by <math>3 \times 5 = 15</math>, then <math>15 \times 2 = 30</math>, or by <math>5 \times 2 = 10</math>, then <math>3 \times 10 = 30</math>. (Associative property of multiplication.) Knowing that <math>8 \times 5 = 40</math> and <math>8 \times 2 = 16</math>, one can find <math>8 \times 7</math> as <math>8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56</math>. (Distributive property.)</i> [Students need not use formal terms for these properties.]</p>	<p>3.OA.B.5. Apply properties of operations as strategies to multiply and divide. Examples:</p> <ul style="list-style-type: none"> <li>• If <math>6 \times 4 = 24</math> is known, then <math>4 \times 6 = 24</math> is also known. (Commutative property of multiplication.)</li> <li>• <math>3 \times 5 \times 2</math> can be found by <math>3 \times 5 = 15</math>, then <math>15 \times 2 = 30</math>, or by <math>5 \times 2 = 10</math>, then <math>3 \times 10 = 30</math>. (Associative property of multiplication.)</li> <li>• Knowing that <math>8 \times 5 = 40</math> and <math>8 \times 2 = 16</math>, one can find <math>8 \times 7</math> as <math>8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56</math>. (Distributive property.)</li> </ul> <p>Note: Students need not use formal terms for these properties. <b>A variety of representations can be used when applying the properties of operations, which may or may not include parentheses.</b></p>	<p>The draft included the footnote in the note to the teachers and added more to the explanation about the "variety of representations" that may be used. It is not clear what that means, indicating that examples or a further expansion of the note may be required.</p>
<p>4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<p>4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.</p> <p>a. Represent these problems using equations or expressions with a letter standing for the unknown quantity.</p> <p><b>b. When problems include multiplication and addition, understand that multiplication is always done before addition - unless parentheses are included.</b></p>	<p>The draft standard added the requirement to "understand that multiplication is always done before addition" when no parentheses are present. This may not be precisely accurate. For example, what if we have a fraction with the numerator as a sum? In that case we would add first. NYS may consider using the phrase "order of operations" to help teachers when they are looking for it in the progression. More support may be needed to ensure that teachers have a consistent understanding of the note, as the meaning and intention are not clear.</p>

Current NY Standard	Draft Standard	Comment
	<p>c. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p>Note: Multistep problems need not be represented by a single expression or equation.</p>	
<p>5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p>	<p>5.OA.A.1. Apply order of operations to evaluate numerical expressions involving only parentheses and/or the four operations.</p>	<p>Clarity is needed for this standard as it leaves an unclear picture of what an expression would look like. All references to symbols of inclusion except for parentheses were removed from the NYS. An explanation is needed for the phrase, "numerical expressions involving only parentheses and/or the four operations." First, there appears to be an article missing in opening for the standard: "apply THE order of operations." Second, since the expressions are numerical, it would be assumed that these expressions involve numbers but not variables. Given that assumption, what is the rationale for requiring only parentheses? And then, the "or" part of "and/or" makes it seem that either all four or none of the operations would be involved. How would expressions involve numbers and parentheses but none of the operations? This standard would be more clear if it stated, "Apply the order of operations to evaluate numerical expressions involving parentheses."</p>
<p>N-Q.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.*</p>	<p>AI_N-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. The greatest precision for a result is only at the level of the least precise data point. For example, if units are tenths and hundredths, then the appropriate preciseness is tenths.</p>	<p>The draft added a definition and example. The added example should be carefully re-evaluated, as level of accuracy is much more nuanced than implied here.</p>

Current NY Standard	Draft Standard	Comment
<p>A-SSE.2. Use the structure of an expression to identify ways to rewrite it. <i>For example, see <math>x^4 - y^4</math> as <math>(x^2)^2 - (y^2)^2</math>, thus recognizing it as a difference of squares that can be factored as <math>(x^2 - y^2)(x^2 + y^2)</math>.</i></p>	<p>All_A-SSE.A.2b. <b>Fluently</b> use the structure of an expression to identify ways to rewrite it, <b>including factoring by grouping and factoring the sum and difference of cubes. Tasks are limited to polynomial, rational or exponential expressions. Examples include, but are not limited to:</b></p> <p>a) <math>81x^4 - 16y^4</math> is equivalent to <math>(9x^2)^2 - (4y^2)^2</math> or <math>(9x^2 - 4y^2)(9x^2 + 4y^2)</math> or <math>(3x + 2y)(3x - 2y)(9x^2 + 4y^2)</math></p> <p>b) <math>x^2 + 4x + 4 + y^2 = 25</math> is equivalent to <math>(x + 2)^2 + y^2 = 5^2</math></p> <p>c) <math>(x^2 + 4)/(x^2 + 3)</math> is equivalent to <math>[(x^2 + 3) + 1] / (x^2 + 3) = (x^2 + 3) / (x^2 + 3) + [1 / (x^2 + 3)]</math> or <math>1 + (1/(x^2 + 3))</math></p>	<p>More clarity is needed to ensure "fluency" is consistently understood regarding exponential expressions. Which part of the glossary definition should be applied here: "just knowing some answers," "knowing some answers from patterns," or "knowing some answers from the use of strategies?"</p>
<p><b>Write expressions in equivalent forms to solve problems (A-SSE.B)</b></p>	<p><b>Al_B. Write expressions in equivalent forms to reveal their characteristics. ★</b></p>	<p>The title for this cluster was changed to Algebra I, to remove problem solving. It is not clear what "characteristics" of an expression would be revealed. Is it possible that the intention is to match the requirement of A-SSE.B.3? In that case, this title should be focused on the properties of the quantity represented by the expression.</p>
<p>F-IF.1. <b>Understand</b> that a function from one set (called the domain) to another set (called the range) <b>assigns to each element of the domain exactly one element of the range. If <math>f</math> is a function and <math>x</math> is an element of its domain, then <math>f(x)</math> denotes the output of <math>f</math> corresponding to the input <math>x</math>.</b> The graph of <math>f</math> is the graph of the equation <math>y = f(x)</math>.</p>	<p>F-IF.A.1. <b>Define</b> a function in terms of domain and range, and the graph of <math>f</math> <b>is</b> the graph of the equation <math>y = f(x)</math>.</p> <p><b>Note: Domain and range can be expressed using inequality, set builder, or interval notations.</b></p>	<p>The first sentence in the draft NYS does not define what they mean by <math>f</math>. The second part of the sentence reads awkwardly. Should it be, "the graph of <math>f</math> <u>as</u> the graph...?" Also, the comma after "domain and range" seems to be misplaced. It should either be removed or another comma added after "Define a function" so that the two performance verbs are not separated.</p>
<p>F-IF.8b Use the properties of</p>	<p>All_F-IF.C.8b. Use the properties of</p>	<p>Clarity is needed to determine whether</p>

Current NY Standard	Draft Standard	Comment
<p>exponents to interpret expressions for exponential functions. <b>For example, identify percent rate of change in functions such as <math>y = (1.02)^t</math>, <math>y = (0.97)^t</math>, <math>y = (1.01)^{12t}</math>, <math>y = (1.2)^{t/10}</math></b>, and classify them as representing exponential growth or decay.</p>	<p>exponents to interpret exponential functions, and classify them as representing exponential growth or decay. <b>Include real world problems involving compound and continuous interest.</b></p>	<p>"continuous interest" is intended to mean "interest compounded continuously."</p>
<p>G-CO.6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.</p>	<p>All_G.CO.B.6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure. Given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent. <b>Note: With rotations, the center of the transformation must be specified.</b></p>	<p>Clarity: How will the center of the transformation be specified? Is this something the student must do or must it be part of the elements provided in the task? (See also G.SRT.A.2.)</p>
<p>G-C.2. Identify and describe relationships among inscribed angles, radii, and chords. <b>Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</b></p>	<p>Geo_G.C.A.2a. Identify, describe <b>and apply</b> relationships among angles <b>and intercepted arcs, specifically:</b>  i. <b>central</b>  ii. <b>inscribed</b>  iii. <b>circumscribed</b>  iv. <b>angles and arcs formed by any combination of intersecting tangents, secants or chords.</b></p>	<p>The language of this draft standard is unclear. Which relationships? The first bullet only lists "central" which is not a relationship. Does this intend "relationship between central, inscribed, and circumscribed angles?" If so, why change the language to something less precise?</p>
	<p>Geo_G.C.A.2b. Identify, describe <b>and apply</b> relationships among segments, specifically:  i. radii  ii. chords  iii. <b>tangents</b>  iv. <b>secants</b></p>	<p>It is not clear what is meant by "relationships among segments" that are radii. What might that mean?</p>
<p>G-MG.2. Apply concepts of density based on area and volume in modeling situations <b>(e.g., persons per square mile,</b></p>	<p>Geo_G.MG.A.2. Apply concepts of density based on area and volume in modeling situations <b>using geometric figures.</b></p>	<p>Clarity: How would one "apply concepts of density...using geometric figures?"</p>

Current NY Standard	Draft Standard	Comment
BTUs per cubic foot).*		
G-MG.3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).*	GEO_G.MG.A.3. Apply geometric methods to solve design problems. <i>Note: Applications could include designing an object or structure to satisfy physical constraints or minimize cost, or to investigate applications of classical geometric problems like the Golden Ratio.</i>	Clarity: The "Golden Ratio" is not a "problem." The intent here is not clear.

In an effort to aid clarity, the NYSMLS helpfully include a glossary of terms. This glossary, however, is significantly different from those typically seen in a set of standards. While most standards' glossaries focus on mathematical definitions, the NYSMLS glossary is intended to be a glossary of verbs. This is a lofty goal and this glossary will be a helpful tool when fully refined. There are a few issues, however, that need to be considered:

- The entries for *recognize* and *identify* are circular, where each defines the other. The distinction between the terms is unclear.
- The entries for *apply* and *use* are circular. The distinction between the terms is unclear.
- The entry for *apply* requires a student to use knowledge in a variety of situations. This may cause an issue of measurability in some standards. For assessment purposes when a standard requires *apply*, are students expected to apply that knowledge in a variety of situations or just one situation?
- In the entry for *derive*, the phrase "current or specified knowledge" needs to be clarified.
- The entry for *explore* is troublesome, yet it is highly important as it is now in many of the revised standards. As currently described, the term, and therefore the associated standards, are simply not measurable with this definition. Each of the other entries in the table is based on the students doing something observable. *Explore*, however, describes the instruction rather than an observable outcome. Further, the entry indicates that *mastery* is not expected, but the term *mastery* is undefined. How is *mastery* related to *fluency*?
- The entry for *express* does not seem to work for all standards that use the term. Standard 2.MD.A.4, for example, does not require changing to a different form.
- The entry for *find* does not seem to work for all standards. Standard 6.NS.C.6c, for example, does not involve calculating a specific value.
- The entry for *fluency* will need additional refinement. Defining *fluency* in a measurable way is an ongoing challenge, but the definition needs to work for all uses of the term in the standards *and* be measurable. As discussed elsewhere in this report, the notion of *fluency* as a *mixture* of knowing, patterns, and strategies at the standard level would require a *fluency*

standard to address all three of these. This becomes troublesome in a standard like K.OA.A.5. This entry, also, is the only noun in a list of verbs.

- The entries for *know* and *understand* are difficult to distinguish. *Know* seems to be based on understanding, but *understand* seems to be based on *knowing*.
- There is no indication that the NYSMLS will include a full glossary that goes beyond verbs. A glossary of terms is important and should not be omitted.

The coding for Geometry standards is in a different format than the rest of the draft NYSMLS: all Geometry standards are coded without a hyphen, for example, G.CO.A.1 (no hyphen). All other NYSMLS are coded with a hyphen: N-RN.A.1 (Algebra II standard), F-IF.A.1 and S-ID.A.1 (Algebra I standards). This difference is an inconsistency within the NYSMLS but also may cause issues for teachers using the Geometry standards, and especially for the circle domain. Consistently using the hyphen might avert possible confusion when teachers see, for example, G.C.B.5 and G.CO.C.9.

Finally, there are a few examples of coding differences between the draft standards and the existing standards. A New York teacher searching for materials aligned to the new F-BF.B.7 will need to know that it used to align to A-SSE.4.

### Specificity

*Quality standards are precise and provide sufficient detail to convey the level of performance expected without being overly prescriptive. Those that maintain a relatively consistent level of precision are easier to understand and use. Those that are overly broad or vague leave too much open to interpretation, while atomistic standards encourage a checklist approach to teaching and learning.*

There are a few instances in the NYSMLS where standards are either overly specific or too vague, and there are instances where the distinction between the requirements in the high school courses is unclear. Below are some examples of issues with specificity:

Current NY Standard	Draft Standard	Comment
4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two- column table. <i>For example, know that</i>	4.MD.A.1. <b>Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.</b> a. Know relative sizes of units: ft., in.; hr., min., sec. For example, know that 1 ft. is 12 times as long as 1 in. Express the length of a 4 ft. snake as 48 in. b. Convert units within one system of units <b>when the</b>	In this case the sub parts and the examples do not always match the stem standard. It appears that the draft version requires different units for the different parts, however, making the limitations different. It is not clear whether the lists of units are comprehensive, but that appears to be the case. In the draft, knowing relative sizes of units

Current NY Standard	Draft Standard	Comment
<p>1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p>	<p>conversion factor is given (e.g., km, m, cm; kg, g; lb., oz.; l, ml). c. Record measurement equivalents in a two column table. For example, generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p>	<p>appears to be limited to feet/inches and hour/min/sec, none of which are required for conversions within a system in part b. And km/m/cm, kg/g, ounce/lb, and liter/mL are used as examples for conversion within the system but not for knowing relative size.</p>
<p>6.G.2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>	<p>6.G.A.2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = lwh</math> and <math>V = Bh</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. Explore cubic numbers through volume.</p>	<p>"Explore cubic number through volume" seems immeasurable and lacking specificity.</p>
<p>8.NS.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., <math>\sqrt{2}</math>). For example, by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</p>	<p>8.NS.A.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions, which includes, <math>\pi^2</math>. For example, by truncating the decimal expansion of <math>\sqrt{2}</math> (square root of 2), show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</p>	<p>The draft specifically included <math>\pi^2</math> as a value that must be estimated. It is not clear why this value is singled out, especially when it has no connection to the example.</p>
<p>A-CED.2. Create equations in two or more variables to</p>	<p>AI_A-CED.A.2. Create equations and linear inequalities in two</p>	<p>In the draft standard, there is no progression for the functions</p>

Current NY Standard	Draft Standard	Comment
<p>represent <b>relationships between quantities; graph equations on coordinate axes with labels and scales.</b></p>	<p>variables to represent <b>a real world context. Limit equations to linear, quadratic, and simple exponentials.</b></p>	<p>addressed in Algebra II even though the notes for Algebra I say that three variables are an expectation for Algebra II.</p>
<p>F-IF.1. <b>Understand that</b> a function from one set (called the domain) to another set (called the range) <b>assigns to each element of the domain exactly one element of the range. If <math>f</math> is a function and <math>x</math> is an element of its domain, then <math>f(x)</math> denotes the output of <math>f</math> corresponding to the input <math>x</math>.</b> The graph of <math>f</math> is the graph of the equation <math>y = f(x)</math>.</p>	<p>AI_F-IF.A.1. <b>Define</b> a function in terms of domain and range, and the graph of <math>f</math> is the graph of the equation <math>y = f(x)</math>. <b>Note: Domain and range can be expressed using inequality, set builder, or interval notations.</b></p>	<p>Is the intention that students are required to work with all three representations?</p>
<p>F-IF.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*</i></p>	<p>AI_F-IF.B.4a. For a function that models a relationship between two quantities: i) interpret key features of graphs and tables in terms of the quantities; and ii) sketch graphs showing key features given a verbal description of the relationship. Algebra I Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; maxima, minima; and symmetries. <b>Tasks have a real-world context and are limited to the following functions: linear, quadratic, square root, cube root, piece-wise defined (including step and absolute value) and simple exponential.</b></p>	<p>It is not clear how square and cube root functions will be approached in Algebra I since higher order polynomials (cube) and inverse functions will not be addressed until Algebra II.</p>
<p>G-CO.10. Prove theorems about triangles. <i>Theorems include: measures of interior angles of a triangle sum to <math>180^\circ</math>; base angles of isosceles</i></p>	<p>Geo_G.CO.C.10. Prove <b>and apply</b> theorems about triangles. <b>Note: Include multi-step proofs and algebraic problems built upon these concepts.</b></p>	<p>The phrase "algebraic problems built upon these concepts" is vague and will need clarification.</p>

Current NY Standard	Draft Standard	Comment
<i>triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</i>		

### Measurability

*Standards should focus on results rather than the processes of teaching and learning. They should make use of performance verbs that call for students to demonstrate knowledge and skills, with each standard being measurable, observable, or verifiable in some way.*

Many of the issues surrounding the use of terms like *explore* and *fluency*, mentioned in the earlier sections on Rigor and Clarity, also apply to measurability.

Issues of measurability occur when the same standard is used in different high school courses. In these cases, for example A.SSE.B.3, the limits between expectations in Algebra I and Algebra II are not clear and will need to be defined. See the accompanying side-by-side chart for more examples.

In the structure of the draft NYSMLS, some standards are separated in such a way that they are not measurable on their own. For example, concerns with measurability arise when substandards are connected to, or disconnected from, their stem statements. For example, consider 3.MD.C.5 and its substandards:

- 3.MD.C.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
- 3.MD.C.5a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
- 3.MD.C.5b. A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

In the NYSMLS parts a and b are listed as separate standards rather than as explanations of the stem statement. While these three statements are identified in the NYSMLS as separate standards, only the stem statement (3.MD.C.5) describes a student performance. Both 3.MD.C.5a and 5b are statements used to inform the stem statement and cannot be measured. A teacher who attempts to use parts a and b as standards will not be able to measure student understanding.<sup>7</sup>

<sup>7</sup> Other examples of this oversight in the NYSMLS include: 1.NBT.2a, 2b and 2c; 2.NBT.A.1a and 1b; 4.MD.C.5a and 5b; 5.NF.B.5a and 5b; 5.MD.C.3a and 3b; 8.G.A.1a, 1b, and 1c; G.SRT.A.1a and 1b.

Measurability issues also arise when a single current standard is split in the NYSMLS into separate standards. For example, in G.C.A.2 the single current standard, with examples but no subparts, was split in the NYSMLS into three separate standards. The first is:

G.C.A.2. Identify, describe and apply geometric properties of circles.

Taken without its sub parts, this standard is too broad and vague for teachers to know how to measure student performances.<sup>8</sup> In G.SRT.B.5, the single current standard was split into sub parts but they are not identified in the NYSMLS as separate standards. Measurability issues were avoided in this case. It is not clear why some standards are separated while others are not.

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<sup>8</sup> Other examples of separate NYSMLS that rely on substandards to define their measurability include N-RN.B.3, G.CO.C.9, G.CO.C.10, G.CO.C.11, G.CO.D.12, and G.SRT.B.4.

## **Review of New York State’s Draft English Language Arts Learning Standards Using Achieve’s Criteria for the Evaluation of College- and Career-Ready Standards**

This review of the 2016 New York Draft K–12 ELA/Literacy Learning Standards (NYSELALS) sought to determine if the standards are high-quality literacy standards that will provide students with the needed literacy skills for success in their coursework and later in their chosen college and career pathways.

As described by the New York State Education Department (<http://www.nysed.gov/draft-standards-english-language-arts>), the committees recommended changes to:

- Streamline the reading standards by merging informational and literary text standards;
- Refocus on prekindergarten to grade 2 standards;
- Re-organize the writing standards;
- Emphasize a variety of texts (balancing literary and informational reading, full-length and shorter pieces, as well as encouraging reading for pleasure); and
- Provide guidance on text complexity to underscore its importance.

When evaluating standards, Achieve uses six distinct criteria: rigor, focus, coherence, specificity, clarity/accessibility, and measurability and compares the standards under review with the best, evidence-based state college- and career-ready standards. New York’s current standards, as well as state standards in over 40 states, are based on the Common Core State Standards (CCSS), which serve as the comparison benchmark for Achieve’s review, as shown in a set of accompanying side-by-side charts. As a result, the analysis presented here describes how the draft NYSELALS relate to the current NY standards.

### **Rigor**

Rigor is the hallmark of exemplary academic standards. Evaluating rigor requires analyzing whether or not the standards have the content and cognitive demands necessary to prepare students for success in credit-bearing college courses without remediation and in entry-level, quality, high-growth jobs. The analysis of draft NYSELALS reveal that New York has attempted to ensure high levels of cognitive demand. The draft standards have a number of important strengths. However, the draft NYSELALS also contain some weaknesses. In particular, there is one critical omission from the draft NYSELALS that must be addressed to ensure the literacy standards prepare students for the increasingly difficult reading demands of K–12 education and ultimately, college and a career. The following are the results of analyzing draft NYSELALS against this criterion.

## Key Strengths That Promote Rigor

- ***The draft NYSELALS address vocabulary acquisition and development as clear priorities. Both are critical factors in building students' reading comprehension skills.***

Nearly a century's worth of research has identified vocabulary as one of the key factors that influence reading comprehension. A robust vocabulary is necessary for students to understand what they hear and read, as well as for them to communicate clearly with others. In particular, students need to build strong academic vocabularies—words that are likely to appear in a variety of texts and content areas.

New York is commended for keeping vocabulary development a priority in the draft NYSELALS. Both reading standard 4 and language standard 4 address vocabulary acquisition through determining meaning of words and phrases; placement in both the reading and language strands signals the importance of vocabulary to educators. In several grades, attention is paid to determining the technical, connotative, and figurative meaning of words in phrases as they are used in text. Additionally, students are expected to use reference materials like dictionaries to support vocabulary growth, and pay attention to roots, affixes, and word relationships. However, there are places in the draft NYSELALS where the rigor is lost in reference to the vocabulary standards. For example, the new combined standard 4.R.4 loses some of the individual aspects of vocabulary acquisition for literature and informational text, and is written as a generic statement expected to apply to both. The revision omits the expectation that students learn about allusions in literature, lessening the rigor of the standard.

Keeping vocabulary acquisition rooted in text is another positive aspect of most of the draft NYSELALS, which clearly expects students to build the skills of using contextual clues to determine the meaning of unknown words. As early as grade K, students are expected to ask and answer questions about unknown words in a text, and by grade 1, students are asked to consider how words and phrases shape meaning in text. By the secondary grades, students are expected to determine the impact of words and phrases on the tone/mood of a text as well as analyze the impact of word choices on meaning. In grades 3–5, curiously, standard 4 omits “in a text,” which completely changes the focus of using contextual clues to determine meaning. Perhaps this was an oversight. In addition, the K–5 draft NYSELALS for Reading Foundations include additional expectations for vocabulary development through grade-level phonics and word analysis skills in decoding words. Draft NYSELALS clearly highlight vocabulary development as a cornerstone of literacy development in grades K–12, though throughout they dropped requirements for students to understand various allusions or analogies.

- ***The draft NYSELALS clearly articulate an important premium on students building knowledge from text and relaying that knowledge in written and spoken form; additionally, a new standard for independent reading, with strengthening, could make***

***even clearer the importance of building knowledge through sustained independent reading.***

Research has shown that students' knowledge about a topic has a greater impact on their reading comprehension than generalized reading ability does.<sup>9</sup> When students have knowledge about a topic, they are much more likely to draw on that knowledge to learn and retain new information, as well as read more complex texts on that topic. Beginning in kindergarten and extending through grade 12, the standards should clearly require that students build knowledge from texts, and in particular, knowledge from content-rich text.

The draft standards require students to demonstrate their knowledge through writing: two of the three writing modes (argument and informative/explanatory) require students to return to the text to provide solid backing for their claims, reasoning, and explanations. Additionally, beginning in kindergarten, writing standards 5, 6, and 7 directly address research to build and present knowledge. Students are expected to conduct research to ask and answer questions, including questions they generate themselves, in order to build knowledge about a topic. Starting in grade 4, students are expected to draw evidence from literary or informational texts to respond to and support analysis, reflection, and research. The draft NY research standards lack the specific focus on short (as well as sustained) research projects. Requiring several short research projects enables students to repeat the research process many times in a year so they are able to develop the expertise needed to conduct research independently. A progression of shorter research projects also encourages students to develop expertise in one area by confronting and analyzing different aspects of the same topic. An ongoing focus on research across the year also reinforces attention to writing to sources, which is evident in benchmark college- and career-ready standards. The reading standards should emphasize building knowledge from content rich informational and nonfiction text. The draft NYSELALS include a new standard in grades K–8, R.11a, which directs student to select texts to develop personal preferences. This standard points to students regularly engaging in independent reading. Independent reading is an important aspect of learning to read. Students develop stamina, efficacy, and persistence through reading on their own a volume of texts that engage them. Independent reading is also when vocabularies and knowledge bases can be rapidly expanded through contextualized exposure to lots of words, and where students learn the sheer pleasure of becoming lost in the printed world of ideas. The standard should be re-written with more clarity and force to ensure it meets these goals. Added language to the R.11a standard around knowledge building could retain the new standard's intent (self-selecting texts) and also more rigorously support independent reading that builds knowledge. For example, "Select texts for sustained independent reading of a range of texts on topics of their preference or interest."

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<sup>9</sup> Recht, D.R. & Leslie, L. (1988). Effect of prior knowledge on good and poor readers' memory of text. *Journal of Educational Psychology*, 80(1), 16

- ***The draft NYSELALS require that students draw evidence from text, both literary and informational, ensuring that students are prepared for success in college or the workplace.***

The ability to find and use evidence appropriately in defense of an idea is a skill necessary for success in college and the workplace. As such, college- and career-ready standards should place a premium on students' skill to develop and hone their ability to call upon information from texts to provide support for their claims and conclusions when they write and speak.

The draft NYSELALS accomplish this: reading standard 1 in all grades require students to locate textual evidence to support what the text says explicitly as well as in defense of inferences drawn from text. Comparably, the writing standards require students in all grades to execute the skill of using evidence when writing arguments (or opinions) and informative/explanatory texts, explicitly calling upon students to provide reasons that are supported by evidence from text. For example, grade 5 requires the use of facts, details, definitions, quotations, or other information and examples relevant to the topic; the grade 8 standard requires students to introduce claims and acknowledge counterclaims in arguments with logical reasoning and relevant evidence; in grades 9–10 informational/explanatory writing, students are required to develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, direct quotations, and paraphrased information from content.

#### **Critical Weaknesses That Undermine Rigor**

- ***The draft NYSELALS lack direction with regard to the expected complexity levels of text students should read regularly throughout the grades. As a result, the standards do not adequately prepare students for the reading demands of college and the workplace.***

One of the main purposes of state standards is to translate the knowledge and skill demands of the “real world” beyond high school to the grade-by-grade learning expectations for the K–12 education system. To be considered a set of standards that meet the demands of college and a career, standards must include a staircase text complexity from grades K–12 to ensure that students leave twelfth grade ready for postsecondary reading demands. In 2006, research conducted by ACT, Inc. concluded that “performance on complex texts is the clearest differentiator in reading between students who are likely to be ready for college and those who are not.”<sup>10</sup> Rather than expectations for text complexity, the draft NYSELALS have only a placeholder for Reading Standard 10 in grades K–12 which reads “Text complexity standard to be moved to supporting guidance.”

To increase the likelihood that students are prepared by graduation to meet the reading demands of college and the workplace, the overwhelming majority of texts (but certainly not all) that students

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<sup>10</sup> ACT, Inc. (2006). Reading between the lines: What the ACT reveals about college readiness in reading. Iowa, City, IA: Author.

read in a given year should fall within the quantitative range of grade-band complexity. Without clear expectations for text complexity, educators in the same grade may select texts for their students with widely varying levels of complexity. This may result in some students not being provided access to texts that will consistently prepare them to meet college- and career-ready expectations. Struggling readers can also benefit by spending some of their time reading leveled texts—especially on topics of individual interest—to rapidly build their vocabularies and knowledge about the world.

State standards must provide for consistent expectations for *all* students, regardless of zip code or parental income, and thus mitigate the tyranny of low expectations for students in predominately low income and minority schools. Put simply, the failure of the NYSELALS to explicitly address text complexity is a matter of equity and preparing all students for postsecondary success.

Interestingly, New York omitted text complexity from the ELA standards, but continued to address it well in the literacy standards for history, science, social studies, and technical subjects (NYSLSHSST). New York is commended for having expectations for text complexity in the draft NYSLSHSST, but also encouraged to address text complexity in the ELA standards as well. Failure to do so will cause confusion among educators who are being given conflicting guidance for different subjects and could lead to educators in ELA choosing texts that are not sufficiently challenging. New York can do so by one or a combination of several methods:

- Including a form of Reading Standard 10, as is, or one that calls on students to read grade-level texts backed up by an appendix which is adopted with the standards that clearly defines the quantitative measures of text complexity for each grade level or within a grade band of one-to-two years (e.g., grades 2 and 3, or grades 6 through 8, 9–10, and 11–12). In addition, the appendix should outline the qualitative measures and how the quantitative and qualitative measures should work together to place a text in an appropriate grade level. This method will clearly establish statewide expectations for the texts students have regular opportunities to read and comprehend during the school year.
- Inserting a phrase in every reading standard that articulates the expectation that the standard is practiced on grade-level text (e.g., “on grade \_\_\_\_ texts” as determined by a quantitative and qualitative analysis). This method will clearly weave the importance of text complexity expectations throughout the standards. An appendix would be needed to clearly define the quantitative and qualitative measures of text complexity for elementary through high school.
- Providing a suggestive or illustrative reading list of appropriately complex literary and informational text at each grade/band. This method will ensure that common texts of the appropriate complexity are taught statewide.
- Including examples within the reading standards themselves. For example, in addition to defining text complexity bands, the standards could include specific requirements regarding the kinds of grade-level appropriate texts that students should read and have access to, including plays by Shakespeare and an American dramatist as well as seminal U.S. documents

of historical and literary significance (e.g., the Declaration of Independence and early nineteenth-century foundational works of American literature). This method will provide sample expectations to educators.

While each of the methods has its own merits, none of the solutions are perfect, and all have their own set of challenges New York should consider.

New York should outline a set of recommendations about how the quantitative and qualitative measures work together—either to explain to educators how the texts on the reading list (if New York chooses to provide such a list) were selected, or to provide guidance for educators to follow when selecting texts on their own.

Text complexity should be measured both quantitatively and qualitatively and then teachers should also take into consideration both the reader and the task to choose appropriate texts. Importantly, quantitative measures place text within a certain grade band to eventually prepare students for college and workplace reading. Once a text is within the defined quantitative band, qualitative measures should be used to place text in the appropriate grade. Qualitative measures can only be conducted by experienced, capable human readers; it takes into account text structure, text purpose, levels of meaning, and knowledge demands. Working in concert, both measures help educators and assessment designers determine the appropriate texts for students. For guidance on appropriate quantitative text complexity expectations, New York should consult the recommendations of a respected evaluator of quantitative complexity such as Lexile, Flesh-Kincaid, Reading Maturity, Text Evaluator, Degrees of Reading Power, or ATOS. Each of these measures has defined a staircase of text complexity anchored in college and workplace reading demands.

- ***Sometimes, the revised language reduces the rigor for students when compared to the current NY standards.***

Students should be held to high, rigorous academic expectations for success. Starting in grade K, and moving through grade 12, students should be held to a set of academic standards that push them toward deeper understandings of text. In the draft NYSELALS, there is some language that reduces rigor for students.

- 3.R.2 asks students to “Paraphrase a variety of texts from diverse cultures including fables, folktales, or myths. Determine the central idea/main idea or theme and explain how it is conveyed through key details in the text.” The revised standard, though still addressing theme, omits the expectation that students determine the central message, lesson, or moral and explain how it is conveyed through the text. The revised standard reduces the expectation to paraphrasing, which requires a lower level of skill.
- 6.R.4 asks students to “Determine the technical, connotative, and figurative meaning of words and phrases as they are used in both literary and informational texts and analyze the impact of word choice on meaning or tone/mood. Analyze the impact of rhyme on meaning

or tone in a specific excerpt of a poem, story, drama, or text.” The standard does not require students to analyze the impact of specific word choices on tone, but instead to analyze the impact of rhyme on meaning or tone. Students would have to read a lot of texts with rhyme to fulfill the demands of this standard, while not learning the critical skill of analyzing the impact of specific language.

- 8.R.2 asks students to “Determine one or more central ideas, and where applicable, themes of a text. Analyze their development over the course of the text and summarize supporting details and ideas.” The revision omits the expectation that students analyze the relationship between themes and its relationship to the characters, setting, and plot.

## Focus

High-quality standards establish priorities about the concepts and skills that students should acquire by the time they graduate from high school. Choices should be based on the knowledge and skills essential for students to succeed in postsecondary education and the world of work. A sharpened focus also helps ensure that the cumulative knowledge and skills students are expected to learn—and teachers are expected to teach—are manageable. The draft NYSELALS, while focused, sometimes contain standards that are not clearly focused for educators. The following are the results of analyzing the draft NYSELALS against this criterion.

- ***The draft NYSELALS reflect a commitment to integrating ELA skills across multiple modalities as indicated by college- and career-ready research.***

The draft NYSELALS address the study of literature and informational text and other important areas including language study, foundational reading, and oral and written communications.

- ***The draft NYSELALS include prekindergarten expectations.***

The inclusion of prekindergarten expectations by NY highlights the importance of early childhood education.

- ***While most of the draft NYSELALS within a grade are a logical and focused articulation of the anchor standard, there are some places where the grade-level standard does not align to an anchor standard.***

Overall, the majority of grade-level standards align to the appropriate anchor standard. However, there are some standards which are assigned to an anchor standard, but do not directly align.

Examples are detailed in the chart below.

Anchor Standard	Draft Standard	Comment
<p><b>Reading Standard 5</b> Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.</p>	<p><b>K.R.5:</b> Recognize a variety of genres.</p>	<p>This standard asks students to recognize various text genres and is not directly aligned to the anchor standard. In addition, there is a question here about whether this is developmentally appropriate for K students who are just learning how to read.</p>
<p><b>Reading Standard 6:</b> Assess how point of view or purpose shapes the content and style of a text.</p>	<p><b>7.R.6a:</b> Analyze stories, drama, or poems by authors who represent diverse world cultures.</p>	<p>This addition is not in alignment with anchor standard 6 for reading, as it addresses neither purpose nor point of view.</p>
<p><b>Reading Standard 7:</b> Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.</p>	<p><b>9-10.R.7a:</b> A. Analyze works by authors or artists who represent diverse global cultures.</p>	<p>The revised standard is not in alignment with the anchor standard. It seems to be content covered already in reading standard 6?</p>
<p><b>Reading Standard 1:</b> Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.</p>	<p><b>11-12.R.1:</b> Cite strong and thorough textual evidence to support analysis of what the text says explicitly and inferentially, including determining where the text is open to interpretation (e.g. may examine purposeful ambiguity, unreliable narrator, unconventional structure, unresolved conflict, etc.); develop factual, interpretive, and evaluative questions for further exploration.</p>	<p>The first part of the revised standard focuses on the use of textual evidence, defines the phrase "open to interpretation," and provides an example in order to add clarity to teachers. The second half of the standard, however, does not align with the second half of the anchor standard as written. The revised grade level standard focuses, in addition, on the process of developing questions rather than citing evidence.</p>

## Coherence

The way in which a state’s college- and career-ready standards are categorized and broken out into supporting strands should reflect a coherent structure of the discipline and/or reveal significant relationships among the strands and how the study of one complements the study of another. If college- and career-ready standards suggest a progression, that progression should be meaningful and appropriate across the grades or grade spans. The following are the results of analyzing the draft NYSELALS against this criterion.

- ***Overall, the draft NYSELALS are structured such that important topics are reinforced between strands, reflecting a thoughtfully aligned system of standards.***

The draft NYSELALS present a comprehensive vision of the ELA classroom that includes important knowledge and skills, not only in the traditional areas of language, writing, and literature, but also in the areas of informational text and media, which are critical for 21<sup>st</sup> century academic success. In the draft standards, reading standard 4, writing standard 1, and language standards 4–6 all address vocabulary acquisition and use, making it clear to educators its ongoing importance. Speaking and listening standard 4 and writing standards 8 and 9 all address the presentation of one’s claims with the use of descriptions, facts, details, and examples, reinforcing the importance of using evidence from text in defense of claims or theses. Speaking and listening standard 2 and reading standard 2 both require for students to analyze the main/central idea of different kinds of text.

- ***While, overall, the draft NYSELALS create meaningful progressions of expectations throughout the grade levels, there are several occasions where standards do not adequately progress from grade to grade. This lack in progression may have a negative impact on student learning in later grades.***

The clear progression of expectations is a challenge in the ELA discipline. Students execute many of the same reading and writing skills across all grade levels, like determining the main idea of theme, determining the meaning of unknown words and phrases, writing clear and coherent pieces with a main idea and supporting details, and the use of standard English grammar and conventions. Though many of the skills are recursive, educators are expected to teach increasingly sophisticated techniques in the use of these skills as they are applied to increasingly complex texts. Standards should build upon each other, with each grade consisting of rigorous but attainable expectations for students. Ideally, when standards progress appropriately from grade to grade, students deepen skills and knowledge by building on prior skills and knowledge. Each year, the expectations for students should be slightly more challenging than the previous year.

While there is a dearth of research on the ideal sequence of progression for student expectations in ELA, there is research about the importance of reading tasks growing in complexity as students advance through the grades in order to be prepared to meet the demands of college and in the workplace.

Several draft NYSELALS clearly progress. For example, writing standards progress from writing opinion pieces with supporting evidence in grades K–4 to crafting and developing evidence-supported arguments in grades 5–12. Additionally, reading standard 6 progresses from distinguishing their [students’] own point of view from that of the author, narrator, or characters in a text in grade 3 to determining an author’s perspective and purpose in a text and explaining how it is conveyed in grade 6.

Though there are some clear progressions, many draft NYSELALS—particularly in reading—do not systematically progress from grade to grade K–12, or progress too rapidly from grade to grade. For example,

One example of progression concern is reading standard 8:

- 2.R.8 requires that students “Explain how the reasons support specific points the author makes in a text.” In grades 2–4, students are essentially executing the same skill: understanding the points an author makes and explaining how the reasons or evidence the author uses supports those points.

An additional example of progression concern is in reading standard 2:

- Between grades 2 and 3, students move from retelling the main topic/central message to determining theme, a much more difficult skill. This may be a big jump for students.
- Students are expected to summarize in grades 5 and 7, but not in grade 6. The omission of summary in grade 6 may be problematic in grade 7. In grade 8, students are no longer summarizing text, but summarizing supporting details and ideas, a lowered expectation.
- All grades, 9–12, have the same expectation, and there is no progression of skill.

A third coherence issue is represented by reading standard 11, which progresses very little between grades. Examples are detailed in the chart below. (Underlined text show what is the same grade to grade.)

Coding	Standard
K.R.11	Make connections between self, text, and the world around them (text, media, social interaction), with guidance and support as needed.
1.R.11	<u>Make connections between self, text, and the world around them (text, media, social interaction).</u>
2.R.11	<u>Make connections between self, text, and the world around them (text, media, social interaction).</u>
3.R.11	Recognize and make connections in narratives, poetry, and drama to other texts, ideas, cultural perspectives, personal events, and situations.

Coding	Standard
4.R.11	<u>Recognize and make connections in narratives, poetry, and drama to other texts, ideas, cultural perspectives, personal events, and situations.</u>
5.R.11	In a literary text, <u>recognize, interpret, and make connections in narratives, poetry, and drama, to other texts, ideas, cultural perspectives, eras, personal events, and situations.</u>
6.R.11	<u>Recognize, interpret, and make connections in narratives, poetry, and drama, ethically and artistically to other texts, ideas, cultural perspectives, eras, personal events, and situations.</u>
7.R.11	<u>Recognize, interpret, and make connections in narratives, poetry, and drama, ethically and artistically to other texts, ideas, cultural perspectives, eras, personal events and situations.</u>
8.R.11	<u>Interpret, analyze, and evaluate narratives, poetry, and drama, artistically and ethically by making connections to: other texts, ideas, cultural perspectives, eras, personal events, and situations.</u>
9-10.R.11	<u>Interpret, analyze, and evaluate text, aesthetically and ethically by making connections to other text, ideas, cultural perspectives, eras, personal events and situations (e.g., use literary language to respond to a variety of genres).</u>
11-12.R.11	<u>Interpret, analyze, and evaluate texts, aesthetically, ethically, and philosophically by making connections to other texts, ideas, cultural perspectives, eras, personal events and situations (e.g., use literary language to respond to a variety of genres).</u>

Standard 11 does not progress meaningfully from grade to grade: Grades 1 and 2, 3–4, 5–7, and 9–12 have the same expectation, and though grades K and 8 are worded slightly differently, the task and expectation is essentially the same as other grades. Substandards 11a and 11b also do not deepen in expectation consistently and rigorously from grade to grade. Achieve recommends that New York revise reading standard 11 and the accompanying substandards to ensure that at each grade level students are expected to demonstrate a growing sophistication with the skill of responding to literature.

### Specificity

Quality standards are precise and provide sufficient detail to convey the level of performance expected without being overly prescriptive. Standards that maintain a relatively consistent level of precision are easier to understand and demonstrate competency of. Those that are overly broad or vague leave too much open to interpretation, increasing the likelihood that students will be held to different levels of performance and create issues of equity, while atomistic standards encourage a

checklist approach to instruction that undermines students' overall understanding of the discipline. In many instances, the draft NYSELALS make the standard less precise. The following are the results of analyzing the draft NYSELALS against this criterion.

- ***The draft NYSELALS add a category called "Responding to Literature." It is unclear if this section is also meant to apply to reading and responding to literary nonfiction, a central component of college- and career-ready standards.***

In addition to standards that focus on literature and informational texts, the draft NYSELALS include an additional category for, "Responding to Literature," which includes reading standard 11. Reading standard 11 in grades K–12 emphasizes the reading of narrative texts; there is no comparable additional reading category or standard(s) for literary nonfiction. For example, in grades 11–12, reading standard 11 directs students to "interpret, analyze, and evaluate texts, aesthetically, ethically, and philosophically by making connections to other texts, ideas, cultural perspectives, eras, personal events and situations (e.g., use literary language to respond to a variety of genres)." This is a standard with many wide-ranging demands. Does NY mean for this standard to also encompass literary nonfiction? If so, consider being explicit.

- ***The draft NYSELALS frequently do not indicate that the reading skills students demonstrate are based on grade-level reading of text.***

Reading standards 2–9, writing standards, and the speaking and listening standards depend on students reading, writing, speaking, and listening about texts and/or topics appropriate to the grade. For example, grade 8 speaking and listening standard 1 requires students to "Engage effectively in a range of collaborative discussions with diverse partners, building on others' ideas and expressing their own clearly." As written, the standard does not include the expectation that students participate in these discussions and use texts appropriate to grade 8 as the linchpin for the discussion. In its current form, and without a reading standard that clearly defines grade 8 reading expectations, students could be expected to read and discuss texts that are too low. The speaking and listening standard, much like the reading and writing standards, should reinforce grade-appropriate reading.

- ***The draft NYSELALS contain some standards that are written too broadly for educators.***

The draft NYSELALS, overall, contain standards that strike a balance of focus with standards that are neither overly prescriptive nor so broad that meaning is open to widely varying interpretation. However, there are some standards that would benefit from additional revision for focus. There are some instances where the draft NYSELALS omit parenthetical examples and lose specificity as a result. Examples of draft standards which need additional specificity are noted in the chart below.

Current NY Standard	Draft Standard	Comment
<p><b>K.W.1:</b> Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is...).</p>	<p><b>K.W.8:</b> Use a combination of media such as drawing, dictating, oral expression, and writing to state an opinion about a familiar topic.</p>	<p>Specificity regarding how students are expected to write an opinion piece is lost in the revision.</p>
<p>Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.</p>	<p><b>8.R.5</b> Compare and contrast the structures of two or more texts in order to analyze how the differing structure of each text contributes to overall meaning, style, or key concept</p>	<p>The standard has three different directives (i.e., compare, contrast, and analyze), for two or more texts with different structures, and requires analysis of three elements (i.e., meaning, style, key concept). Written very broadly, this standard may prove to be a challenge for educators who will attempt to strike the appropriate balance for the study of text structure in grade 8.</p>
<p>Analyze the impact of the author’s choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).</p>	<p><b>11-12.R.3:</b> Analyze how and why individuals, events, and ideas develop and interact over the course of a text. In literary texts, analyze the impact of author's choices. In informational texts, analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of a text.</p>	<p>The revised standard omits the parenthetical examples, and as a result loses specificity.</p>

Below are some additional examples of standards from the draft NYSELALS that would benefit from additional precision.

Current NY Standard	Draft Standard	Comment
<p><b>RL.7.9:</b> Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.</p> <p><b>RI.7.9:</b> Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.</p>	<p><b>7.R.9:</b> Compare and contrast both literary and informational texts. In literary texts, compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period in order to understand how authors of fiction present history. In informational texts, analyze how two or more authors writing about the same topic shape their presentations of key information by identifying different evidence or different interpretation of facts.</p>	<p>The revised standard changes the wording pertinent to literature from "how authors of fiction use or alter history" to "how authors of fiction present history." The word "present" is more general than how authors either use or alter history.</p>
<p>There is no comparable version in current NY standards.</p>	<p><b>8.W.11:</b> Create a presentation, art work, or text in response to a literary work with a commentary that identifies connections and explains divergences from the original.</p> <p>A. Make well-supported personal, cultural, textual, and thematic connections across genres.</p> <p>B. Not applicable to this grade.</p> <p>C. Not applicable to this grade.</p> <p>D. Create poetry, stories, plays, and other literary forms (e.g. videos, art work).</p>	<p>This standard is unclear and imprecise in several ways. Students are asked to create a presentation, art work or text (very broad ranges) with a commentary that "identifies connections and explains divergences from the original." What constitutes original? Part A also creates an equity issue: Students who can make personal connections will, and students who cannot won't. Additionally, in part A, students are asked to make connections across genres—but it's unclear what the connections are intended to be about. Finally, it is unclear for what purpose students are creating poetry, stories, plays, and other literary forms. As written, this standard lacks precision and will be difficult to</p>

Current NY Standard	Draft Standard	Comment
		measure.
<p><b>RL.9-10.3:</b> Analyze how and why individuals, events, and ideas develop and interact over the course of a text. In literary texts, analyze how complex and/or dynamic characters develop, interact with other characters, advance the plot, or develop the theme. In informational texts, analyze how the author unfolds an analysis, including the sequence, the introduction and development of ideas, and the connections that exist.</p> <p><b>RI.9-10.3:</b> Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.</p>	<p><b>9-10.R.3:</b> Analyze how and why individuals, events, and ideas develop and interact over the course of a text. In literary texts, analyze how complex and/or dynamic characters develop, interact with other characters, advance the plot, or develop the theme. In informational texts, analyze how the author unfolds an analysis, including the sequence, the introduction and development of ideas, and the connections that exist.</p>	<p>The parenthetical example of complex characters has been omitted, changing the clarity on the kind of complex character students analyze; this omission reduces specificity for educators.</p> <p>The addition of "why" to the standard is a good one, as it calls on students to think about the circumstances surrounding the development of individuals, events, and ideas. The use of "and," however, requires that students are analyzing both "how" and "why" for "individuals," "events" and "ideas," which is a very weighty expectation for each text.</p>
<p><b>RL.11-12.6:</b> Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).</p> <p><b>RI.11-12.6:</b> Determine an author's point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness, or beauty of the text.</p>	<p><b>11-12.R.6:</b> Determine and analyze how authors employ point of view, purpose, rhetorical strategies and literary elements to shape explicit and implicit messages regarding content, perspective, and style in a wide range of global and diverse texts. (e.g., examine persuasiveness, aesthetic quality, satire, sarcasm, irony, or understatement).</p>	<p>This standard has at once become broader and more complicated. Instead of the focus being on point of view (difference between what is stated and what is meant), the focus is broadened to also include purpose, rhetorical strategies, and literary elements. In addition, what are "a wide range of diverse texts?" Is there a definition for what texts qualify as global?</p>

In contrast, sometimes standards are written too narrowly for educators. There are some draft NYSELALS which are too narrowly focused. For example, K.R.7 directs students to “Engage in a picture walk, with guidance and support as needed.” A picture walk is more of an instructional strategy than educational standard. If the goal is for students to develop the skill of predicting what will happen in text by engaging in a preview of the text, there may be other strategies teachers can use (e.g., K-W-L, describing the characteristics of key words, reading headings, and subheadings) in addition to a picture walk. This standard is written so narrowly that educators have no other options to activate prior knowledge before reading a text. A similar example is found in reading standard 11 for grades K–2, which asks students to make connections between self, text, and the world around them. Making text to self, text, and world connections is often an instructional strategy to activate schema for text. If the intent is for students to respond to literature, as noted by the category for reading standard 11 “Responding to Literature,” the standard is written too narrowly as one instructional strategy that is very prescriptive in detailing how students should create such a response. New York should broaden standards which provide too much specificity by the way of instructional strategies.

### **Clarity/Accessibility**

The format should be easy to digest and standards should be written clearly, without jargon-laden prose, thereby communicating in language that can gain widespread acceptance not only from postsecondary faculty, but also from employers, teachers, parents, school boards, legislators, and others who have a stake in schooling. Some of the language in the draft NYSELALS is clear; however, there are several places where clarity is lost. The following are the results of analyzing the draft NYSELALS against this criterion.

- ***Overall, the format of the draft NYSELALS makes it easy to recognize the expectations within a grade, but not progressions from grade to grade.***

The format of the draft NYSELALS has a progression of cognitive complexity from grade to grade. However, tracking that progression is difficult in the current format. Moving forward, it would be helpful for New York to offer the standards to educators in two formats: both by grade level and by standard progression, so it is easy for educators to identify how a standard evolves through the grades.

- ***The nomenclature and organization of the standards is easy to follow.***

In the draft NYSELALS, there are a set of anchor standards and grade level reading standards that correspond to those anchor standards, but there are both grade specific standards that do not adequately reflect the anchor standards (as identified in Focus). On the other hand, reading standard 1 always refers to drawing evidence from text; reading standard 4 and language standard 4 always address vocabulary acquisition and use.

- ***The draft NYSELALS combine reading literature and reading informational text into one category, “reading.” While combining reading into one suite may ultimately be a positive revision, in its current form, the language of the combined reading standard is inconsistent and difficult for the reader to follow.***

The content of the reading standards is inconsistently organized: Sometimes the revised reading standard begins with expectations in literature; other times it begins with expectations for informational text. Sometimes the expectations for different types of text are not identified. As such, the suite of reading standards is inconsistent and unclear. This inconsistency is found both within grades and between grades, K–12. Examples are detailed in the chart below and in the accompanying side-by-side charts.

Coding	Draft Standard	Comment
5.R.3	In literary texts, compare and contrast two or more characters, settings, and events, drawing on specific details in the text. In informational text, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific information.	This standard does not have an opening statement. It begins with literary text in the first sentence and ends with informational text in the second sentence.
8.R.2	Determine one or more central ideas, and where applicable, themes of a text. Analyze their development over the course of the text and summarize supporting details and ideas.	This standard addresses both literary and informational text in two sentences, without detailing the expectation for each text type independently.
8.R.3	Analyze explicit connections within a text. In informational texts, analyze how a text makes connections among and distinctions between individuals, ideas, or events. In literary texts, analyze how particular lines of dialogue or events propel the action, reveal aspects of a character, or provoke a decision	This standard begins with an opening statement. The second sentence identifies the expectation for informational text and the third sentence identifies the expectation for literary text. Also, here the informational text standard comes before the literature standard.
8.R.9	Compare and contrast both literary and informational texts. In literary texts, analyze how a modern work of fiction draws on themes, patterns of events, or character types from other literary texts. In informational texts, analyze a case in which two or more texts provide conflicting information on the same topic and identify where texts disagree on	This standard addresses both literary and informational text in the opening statement. Then, it provides additional detail and requirements for literary text in the second sentence and additional detail for informational text in the third sentence.

Coding	Draft Standard	Comment
	matters of fact or opinion	

The inconsistent arrangement of the reading standards makes them very difficult for the reader to follow. Achieve recommends revising the reading standards both within a grade and between grades K–12 so they all follow the same predictable format. Moreover, because the literature standards and informational text standards are put in the same standards, they are long and complicated to follow. NY might consider bulleting the two different requirements for easier reading.

- ***In many instances, the draft NYSELALS have made the language less clear to educators.***

While some of the revisions attempt to streamline the language in the standard, oftentimes the new version makes the standard less clear. Standards that are not clear to educators run the risk of being interpreted differently, and students having unequal access to the level of rigor the standards intend. Examples are detailed in the chart below.

Coding	Draft Standard	Comment
1.W.9	Plan, draw, and write an informative/explanatory text to introduce a topic, supplying some facts to develop points, and provide a sense of closure.	What does it mean to "write to introduce a topic?"
4.R.3	In literary texts, describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text. In informational texts, explain events, procedures, ideas, or concepts, including what happened and why, based on the specific information from the text	The revised standard omits "historical, scientific, or technical text," making the standard less clear to educators.  Somewhere, NY should define informational text for educators.
5.R.3	In literary texts, compare and contrast two or more characters, settings, and events, drawing on specific details in the text. In informational text, explain the relationships or interactions between two or more individuals, events, ideas, or concepts based on specific information.	The parenthetical example, (e.g., how characters interact) is omitted, reducing clarity. In addition, the standard would be clearer if the phrase "in text" was added to "specific information" to make it clear that students are to use information from the text they are reading.
6.R.9	Compare and contrast one author’s presentation with that of another in both literary and informational texts. Analyze how	In the revised standard, it is unclear what presentation consists of. Does presentation refer to events, ideas,

Coding	Draft Standard	Comment
	two or more texts address similar themes, topics or events in order to build knowledge or to compare the approaches of two different authors.	characters, setting, theme? This is too broadly worded. The lack of parentheticals (e.g., a memoir written by and a biography on the same person) lessens the clarity of the standard.
7.W.1	<p>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>A. Not applicable to this grade.</p> <p>B. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>C. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>D. Establish and maintain a formal style.</p> <p>E. Provide a concluding statement or section that supports the information or information provided.</p>	<p>In general, moving the elements of writing that are applicable to all genres is a good idea and a positive revision. However, as written, W.1 refers to argument, informative, and narrative writing. Substandards A–E sometimes conflict with the expectations of narrative writing as defined in standard 10. For example, 7.W.10 requires students to use precise words and phrases, relevant descriptive details and sensory language; 7.W.1d requires that students "establish and maintain a formal style." Since all the substandards do not seem to be applicable to all three forms of writing, it could cause confusion.</p>
8.R.6	<p>Analyze an author’s perspective or purpose in a text. In informational texts, analyze how the author addresses conflicting evidence or viewpoints. In literary texts, analyze how the differences between the perspectives of the characters, the audience, or reader create effects such as mood and tone.</p>	<p>It is unclear how differences between the perspectives of the characters create mood and tone. The current NY standard is much clearer:</p> <p>Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor. Moreover, the omission of the parenthetical makes the expectation and intent of the standard less clear.</p>
9-10.W.11	<p>Create literary texts that demonstrate knowledge and understanding of a variety of techniques present in acclaimed works.</p>	<p>This standard is very unclear. There appear to be four independent requirements here. The loss of various parentheticals to describe what</p>

Coding	Draft Standard	Comment
	<p>A. Engage in a range of prewriting experiences to express personal, social, and cultural connections and insights.</p> <p>B. Identify, analyze, and use elements and techniques of various genres of literature.</p> <p>C. Develop critical and interpretive texts from more than one perspective, including historical and cultural.</p> <p>D. Create poetry, stories, plays, and other literary forms (e.g., videos, art work).</p>	<p>constitutes "variety of techniques present in acclaimed works?" There are dozens of literary techniques, from the well-known metaphor to the more less known and taught euphony. D seems like a catchall for various forms of writing that could be covered under narrative.</p>
11-12. R.8	<p>Delineate and evaluate the application of guiding principles and use of legal reasoning in works of public advocacy and in official documents by assessing the validity or fallacy of key arguments, determining whether the supporting evidence is relevant and sufficient.</p>	<p>It is unclear what is meant by "guiding principles?" Guiding principles for what? Under the current standard, students were expected to evaluate the reasoning found in seminal U.S. texts including the application of constitutional principles.</p>

### Measurability

In general, standards should focus on results rather than the process of teaching. A critical component of any college- and career-ready set of standards is the ability to measure or assess students' progress toward mastery. The following are the results of analyzing the draft NYSELALS against this criterion.

- ***The draft NYSELALS are generally measurable, although they do include expectations that are not.***

New York's draft standards generally focus on the results of learning and make use of performance verbs that call for students to demonstrate knowledge and skills. However, the New York standards also include expectations that students will demonstrate strategies and employ metacognitive approaches including pre-reading strategies (e.g., engage in a picture walk) and comprehension strategies (e.g., make connections between self, text, and the world around them). These are habits and processes successful readers engage in, quite often unconsciously, and are not easily observed or measured. Furthermore, these strategies are the means to the end, not the intended goal or outcome of leaning and teaching. Achieve recommends that the standards focus on measurable and

observable outcomes of comprehension. Examples of standards that will be difficult to measure are detailed in the chart below.

Coding	Draft Standard	Comment
K.R.7	Engage in a picture walk, with guidance and support as needed.	As stated earlier, this is more of an instructional strategy than a content or process standard. How would this standard be measured? Finally, shouldn't students have to pay attention to the relationship between the illustrations and what the text says? What learning occurs by merely engaging in a picture walk?
1.R.11	Make connections between self, text, and the world around them (text, media, social interaction).	Making connections between self, text, and the world as an instructional standard creates an equity issue for students. Texts are very diverse, and there is no way to ensure that all students have the background to make the connections—in short, some students will be able to and others will not. We read texts in order to learn something outside of ourselves. While making connections can be an instructional strategy when used judiciously, it does not work well as a standard. It is not measurable. How would you fairly gauge learning with this standard?
4.R.11a	Self-select text based upon personal preferences with opportunities to read independently for pleasure.	It is unclear how a teacher could teach or measure this standard. As an expectation for students, this could be a real strength if it were to be re-worded to promote students reading widely on a variety of topics of their choice. With revisions intended to impact instructional decisions and measurability, this could be a good and much needed addition.
5.W.8	Write an argument based on an opinion on topics or texts, supporting a point of view with reasons and information. A. Introduce a topic or text with a clear topic sentence, state an opinion, and create an organizational structure in which ideas are logically within paragraphs to support the	The revised standard has students write an argument based off an opinion on topics or texts, however the essential parts of an argument are missing. Arguments are constructed from claims that are then developed by reasons and evidence—this standard mixes the two and may be confusing for teachers. This may also be a difficult standard to assess: Are evaluators looking for argumentation or opinions?

Coding	Draft Standard	Comment
	<p>writer's purpose.</p> <p>B. Provide logically ordered reasons that are supported by facts and details from various sources.</p>	
8.R.11b	<p>Establish and use criteria to classify, select, and evaluate texts to make informed judgments about the quality of the pieces.</p>	<p>It is unclear what the goal of this standard is. It is unclear how one would use criteria to select texts that allow one to make informed judgments about quality. It is also unclear what quality means in terms of this standard; as stated, text quality will be pretty subjective. How would this be taught or measured? Would NY educators and students be expected to use an objective set of criteria for a qualitative analysis, or would the criteria simply default to "I like this text" or "I don't like this text?" How is quality judged?</p>
9-10.W.11	<p>Create literary texts that demonstrate knowledge and understanding of a variety of techniques present in acclaimed works.</p> <p>A. Engage in a range of prewriting experiences to express personal social, and cultural connections and insights.</p> <p>B. Identify, analyze, and use elements and techniques of various genres of literature.</p> <p>C. Develop critical and interpretive texts from more than one perspective, including historical and cultural.</p> <p>D. Create poetry, stories, plays, and other literary forms (e.g., videos, art work).</p>	<p>What constitutes "a variety of techniques present in acclaimed works?" What qualifies as an "acclaimed work?" There is no way to ensure consistency of the application of this standard statewide, and in its current form, this standard will be difficult to measure. There are dozens of literary techniques, from the well-known metaphor to the more less known and taught euphony. With C, what is the definition of "Critical and interpretative" for a student in grades 9–10? D seems like a catchall for various forms of writing that could be covered under narrative. All four substandards seem to be independent of one another here, so does measuring this standard happen as a whole here or substandard-by-substandard?</p>

- ***The lack of a definition of grade-level or grade-band quantitative measures of text complexity will impact the state assessment system if it is not addressed.***

In large part, the issue of measurability centers around clear guidance and expectations for text complexity. As noted earlier, New York needs to include clear guidance about evaluating text quantitatively and qualitatively, and how the qualitative analysis of texts should be used to complement the quantitative grade-band placement. This will impact not only statewide assessment systems, but district and classroom expectations and assessments as well. Without clearly defined parameters for text complexity at each grade, teachers may select texts that are below the appropriate grade level quantitatively and justify their instructional use by leaning too heavily on the qualitative measures, especially if they have been teaching those texts for years. Conversely, teachers may select texts that are too far above the appropriate grade level quantitatively, which may cause frustration for students. In short, by not articulating clearly defined expectations for text complexity, students will be left unprotected and inequities will result—leaving some students on the path to college and career readiness, and others not. These measures and how they work together to identify appropriately complex text should be clearly defined and communicated.

Interestingly, the draft literacy standards for history/social studies, science, and technical subjects include clear guidance on text complexity expectations for grades 6–12. Clearly defined expectations for text complexity will ensure students are presented with appropriate texts on statewide assessments, and increase the likelihood that students will have the opportunity to engage with appropriate texts during instruction.

## **Review of New York State’s Draft Literacy Standards for History/Social Studies, Science, and Technical Subjects Using Achieve’s Criteria for the Evaluation of College- and Career-Ready Standards**

This review of the New York Draft 6–12 Literacy Standards for History/Social Studies, Science, and Technical Subjects (NYLSHSST) sought to determine if the standards are high-quality, content-area literacy standards that will provide students in history/social studies and science/technical subjects with the needed literacy skills for success in their coursework and later in their chosen college and career pathways.

In the draft NYLSHSST, the changes generally focus on:

- Revisions to language for clarity;
- Emphasizing “sources” rather than “texts,” to emphasize the graphical nature and multimedia nature of many texts used in content-area study; and
- Building on the writing expectations to add narrative writing in the content areas across grades 6–12.

For its review of the literacy standards, Achieve focused its review on the grades 6–12 literacy standards for which New York State has proposed revisions. Achieve uses six distinct criteria: rigor, focus, coherence, specificity, clarity/accessibility, and measurability and compares the standards under review with the best, evidence-based state college- and career-ready standards. New York’s current standards, as well as state standards in over 40 states, are based on the Common Core State Standards (CCSS), which serve as the comparison benchmark for Achieve’s review, as shown in a set of accompanying side-by-side charts that show in detail Achieve’s analysis of the draft NYLSHSST. As a result, the analysis presented here describes how the draft NYLSHSST relate to the current NY standards.

### **Rigor**

Rigor is the hallmark of exemplary academic standards. Evaluating rigor requires analyzing whether or not the standards have the content and cognitive demand necessary to prepare students for success in credit-bearing college courses without remediation and in entry-level, quality, high-growth jobs. An analysis of the draft NYLSHSST reveal that New York has attempted to ensure high levels of cognitive demand.

- ***The revised literacy standards continue to place a premium on students building knowledge from text and communicating that knowledge in written form.***

Research has shown that students’ knowledge about a topic has a greater impact on their reading comprehension than their generalized reading ability does.<sup>11</sup> When students have knowledge about a topic, they are much more likely to learn and retain new information, as well as read more complex texts on that topic. The revised content-area literacy standards continue to emphasize students’ citation of specific textual evidence, their determining of central ideas and details, their integration of ideas from across texts and visuals (and print and digital texts), and their reading of texts at an appropriate level of text complexity. The revised literacy standards also require students to demonstrate their knowledge through writing in informative, argumentative, and narrative modes.

- ***The revised literacy standards may unintentionally lower the rigor of standards-aligned instruction and learning by limiting the expectation of “texts” across standards to include primarily varied graphical and visual “sources.”***

Part of the reason educational standards exist is to ensure equity between classrooms and across schools and districts. By articulating clear standards that are not open to wide differences of interpretation, states ensure that every student in every classroom builds the skills that he or she needs for success in the next grade level and for success in future college and career endeavors. Standards that are revised to be more comprehensive and inclusive can have the externality of individual teachers being able to choose less rigorous paths to “meet” the standards.

This analysis assumes that the change from “text” to “source” was made to reflect the use of many graphics and visuals to convey information in the content areas, but there may be an unintended consequence of the language change. Consider a classroom with a large English language learner population: A teacher might be tempted to more often interpret “source” to mean an image, a table, or a chart, rather than a complex, grade-appropriate text. If teachers frequently make this interpretation, students may exit the classroom without building the needed comprehension skills and reading stamina. Clarifying the definition and the expectations will be helpful here.

Consider another revision below:

Source	Coding	Standard
Current NY Standard	6-8.RH.5	Describe how a text presents information (e.g., sequentially, comparatively, causally).
NYSLSHSST	6-8.RH.5	Describe how a text presents information (e.g., sequentially, comparatively, causally, visually, and graphically).

<sup>11</sup> Recht, D.R. & Leslie, L. (1988). Effect of prior knowledge on good and poor readers’ memory of text. *Journal of Educational Psychology*, 80(1), 16

The draft NYLSHSST may have the unintended consequence of teachers focusing more often on students identifying ways that the text presents ideas visually, and less often on the ways that authors choose to structure complex ideas in text—sequentially, comparatively, or causally. Understanding these relationships between the ideas the author communicates and the choices he or she makes in how to structure these ideas for the reader is an important skill for students to read critically and use what they read to model their own decisions as writers.

## **Focus**

High-quality standards establish priorities about the concepts and skills that students should acquire by the time they graduate from high school. Choices should be based on the knowledge and skills essential for students to succeed in postsecondary education and the world of work. A sharpened focus also helps ensure that the cumulative knowledge and skills students are expected to learn—and teachers are expected to teach—are manageable. The following are the results of analyzing the draft NYLSHSST against this criterion.

- ***The revised literacy standards reflect a commitment to emphasizing reading and writing instruction across disciplines; however, the addition of narrative writing reduces the focus of the standards.***

The revised literacy standards maintain an appropriate focus on specific reading and writing skills required for success in content-area study in history/social studies, science, and other technical fields. The draft NYLSHSST retain the expectation that students write arguments and explanatory/informative pieces, as well as include new expectations for narrative writing.

The addition of narrative writing as a separate genre is somewhat puzzling. Adding narrative writing as a new expectation for content-area teachers does not reflect the way that experts in history, social studies, science, and other technical fields typically communicate in their disciplines. In the current standard, narrative writing is referenced as a mode of writing from which students can employ specific techniques or devices to help tell the story of a historical individual, for example, or to better describe a scientific finding with sensory language. The addition as a separate expectation for performance may result in confusion for both teachers and students, as they try to fit the round narrative into the square expectations for relaying information in history/social studies, science, and technical subjects. New York should consider dropping narrative writing as a separate suite of standards, but including language that allows students to employ narrative techniques in their content-area writing. Such a revision may perhaps be more appropriate than students being expected to produce stand alone narratives in their content-area classes.

## Coherence

The way in which a state’s college- and career-ready standards are categorized and broken out into supporting strands should reflect a coherent structure of the discipline and/or reveal significant relationships among the strands and how the study of one complements the study of another. If college- and career-ready standards suggest a progression, that progression should be meaningful and appropriate across the grades or grade spans. The following are the results of analyzing the draft NYLSHSST against this criterion.

- ***The draft NY content-area literacy standards include revisions designed to increase coherence within grade bands, across grade bands, and with content-specific standards.***

New York State demonstrates a clear attention to coherence in its decisions for revisions to the literacy standards. A number of changes are made to align with the anchor standards; to align with grade bands above and below; and to align more closely with content-area expectations.

## Specificity

Quality standards are precise and provide sufficient detail to convey the level of performance expected without being overly prescriptive. Standards that maintain a relatively consistent level of precision are easier to understand and use. Those that are overly broad or vague leave too much open to interpretation, increasing the likelihood that students will be held to different levels of performance and create issues of equity, while atomistic standards encourage a checklist approach to instruction that undermines students’ overall understanding of the discipline. While some of the revisions in the draft NYLSHSST make the expectation more precise, there are other revisions in which specificity is lost. The following are the results of the analysis against this criterion.

- ***Overall, the revisions are appropriately specific (not too broad or vague, not too narrow or atomistic); in some cases, however, the revised expectations are less precise.***

Overall, the revised content-area literacy standards for grades 6–12 maintain the same level of specificity as the current expectations do and succeed in being appropriately specific for designing standards-aligned instruction and assessment. Occasionally, the state’s revisions, however, make the statements less precise. For example, throughout the 6–12 content-area literacy standards, New York appears to have made a deliberate decision to change the word “text” to the word “source,” to suggest the inclusion of non-print texts in teaching and learning. However, the revised statement for 9-10.RST.3 uses language that suggests that a “source” may not encompass print text:

Analyze how and why scientific ideas and reasoning are developed and modified over the course of a text, source, argument, etc.

By listing “text,” “source,” and “argument” as different types, the reader is left to wonder, then, what does constitute a “text?” What constitutes a “source?” When “source” is the only word used in statement, what kinds of materials are students expected to encounter? This kind of precision and specificity with language is essential for clear standards that will be equitably used across classrooms, schools, and districts.

In this same statement, ending the statement with “etc.” is also imprecise. Much clearer are parenthetical e.g. statements, that provide examples of the type of texts, techniques, features, and so on that are included in the expectation, without suggesting that teachers and students are limited to these examples. A parenthetical makes these kinds of examples more clearly illustrative and less a part of the “requirement” of the standard.

**Clarity/Accessibility**

The format should be easy to digest and standards should be written clearly and without jargon, thereby communicating in language that can gain widespread acceptance not only from postsecondary faculty, but also from employers, teachers, parents, school boards, legislators, and others who have a stake in schooling. Most of the language in the recommended revisions is clear and accessible; however, in some cases, clarity has been lost. The following are the results of analyzing the revised content-area literacy standards against this criterion.

- ***In some instances, the revised content-area literacy standards have honed the language and improved the clarity of statements from the current version.***

The revisions clarify expectations for educators in some cases like the following.

Current NY Standard	Draft Standard	Comment
6-8.WHST.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.	6-8.WHST.5 Develop and strengthen writing by planning, editing (e.g. adult and peer review), revising, rewriting, and/or using a different approach.	The streamlined language makes the emphasis on the writing process clearer.
6-8.WHST.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related,	6-8.WHST.7 Conduct short research projects to answer a question (including a self-generated question by the end of grade 8), drawing on several sources and generating	Adding the phrase “by the end of grade 8” helps to clarify the grade-level progression with the grade-band expectation. It is worth noting that the ELA standards require students to

Current NY Standard	Draft Standard	Comment
focused questions that allow for multiple avenues of exploration.	additional related, focused questions that allow for multiple avenues of exploration.	“conduct research to answer questions, including self-generated question....” beginning in grade 3.
9-10.RST.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	9-10.RST.7 Translate scientific or technical information expressed as written text into visual form (e.g., a table or chart), and translate information expressed visually or mathematically (e.g., in an equation) into words.	The revision clarifies expectation.

- The revised content-area literacy standards sometimes omit examples that have been included in the current standards or use specific words or phrases which may make specific expectations unclear.***

In a few instances, the revision includes words that may have different meanings to different users. Providing as much clarity as possible is essential to ensuring equitable implementation of the standards. For example, in the technology standard, the expectation that students will “demonstrate digital citizenship” (e.g., 9-10.WHST.6) will likely have different meanings to different users.

As stated above, the word “source” seems to have been inserted purposefully throughout the revised NYLSHSST. To ensure that this term is clear to all users, it would be helpful to define it in a parenthetical when it first appears at each grade band, to ensure that the meaning is clear to all readers of the standards. As stated above in the section on Rigor, it would be helpful to clarify that both print-text analysis and visual-source analysis are expected to meet the standards at each grade band.

As another example, the current standards state that students will “Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes” (WHST.9-10.2). The revision omits these examples, and instead states that students will “Write informative/explanatory text focused on discipline-specific content” (9-10.WHST.2). The examples are helpful in clarifying the types of texts students are expected to produce.

**Measurability**

In general, standards should focus on results rather than the process of teaching. Overall, the revised content-area literacy standards present clearly measurable student outcomes that focus on results rather than on processes or strategies. The standards make use of performance verbs that call for

students to demonstrate knowledge and skills rather than those verbs that refer to learning activities (e.g., *examine* and *explore*) or cognitive processes (e.g., *know* or *appreciate*).

When words or phrases are unclear or open to interpretation (such as “digital citizenship”) or when words or phrases lack the specificity to ensure that all readers define the term the same way (such as “source”) these issues of specificity or clarity can impact measurability because all students may not have been equitably and appropriately prepared for standards-aligned assessments if their teachers interpret the standards in different ways. By attending to the general issues stated in this review, and considering the more detailed word-level feedback provided in the side-by-side charts, New York State can help to ensure that the revised content-area literacy standards (NYSLSHSST) for grades 6–12 meet the criterion for measurability, and can be fairly and validly assessed.

## Appendix A: The Criteria Used for the Evaluation of College- and Career-Ready Standards in English Language Arts and Mathematics

Criteria	Description
Rigor: What is the intellectual demand of the standards?	Rigor is the quintessential hallmark of exemplary standards. It is the measure of how closely a set of standards represents the content and cognitive demand necessary for students to succeed in credit-bearing college courses without remediation and in entry-level, quality, high-growth jobs. For Achieve’s purposes, the Common Core State Standards represent the appropriate threshold of rigor.
Coherence: Do the standards convey a unified vision of the discipline, do they establish connections among the major areas of study, and do they show a meaningful progression of content across the grades?	The way in which a state’s college- and career-ready standards are categorized and broken out into supporting strands should reflect a coherent structure of the discipline and/or reveal significant relationships among the strands and how the study of one complements the study of another. If college- and career-ready standards suggest a progression, that progression should be meaningful and appropriate across the grades or grade spans.
Focus: Have choices been made about what is most important for students to learn, and is the amount of content manageable?	High-quality standards establish priorities about the concepts and skills that should be acquired by graduation from high school. Choices should be based on the knowledge and skills essential for students to succeed in postsecondary education and the world of work. For example, in mathematics, choices should exhibit an appropriate balance of conceptual understanding, procedural knowledge, and problem-solving skills, with an emphasis on application. In English language arts, standards should reflect an appropriate balance between literature and other important areas, such as informational text, oral communication, logic, and research. A sharpened focus also helps ensure that the cumulative knowledge and skills that students are expected to learn are manageable.
Specificity: Are the standards specific enough to convey the level of performance expected of students?	Quality standards are precise and provide sufficient detail to convey the level of performance expected without being overly prescriptive. Standards that maintain a relatively consistent level of precision (“grain size”) are easier to understand and use. Those standards that are overly broad or vague leave too much open to interpretation, increasing the likelihood that students will be held to different levels of performance, while atomistic standards encourage a checklist approach to teaching and learning that undermines students’ overall understanding of the discipline. Also, standards that contain multiple expectations may be hard to translate into specific performances.
Clarity/Accessibility: Are the standards clearly written and presented in an error-free, legible, easy-to-use format that is accessible to the general public?	Clarity requires more than just plain and jargon-free prose that is also free of errors. College- and career-ready standards also must be communicated in language that can gain widespread acceptance not only from postsecondary faculty but also from employers, teachers, parents, school boards, legislators, and others who have a stake in schooling. A straightforward, functional format facilitates user access.
Measurability: Is each standard measurable, observable, or verifiable in some way?	In general, standards should focus on results rather than the processes of teaching and learning. College- and career-ready standards should make use of performance verbs that call for students to demonstrate knowledge and skills and should avoid using those verbs that refer to learning activities — such as “examine,” “investigate,” and “explore” — or to cognitive processes, such as “appreciate.”