STANDARDS AND CURRICULUM

KEY ISSUES

Standards outline what each student should learn by the end of each grade level. Standards in North Carolina are put in place at the state level to ensure all students will be taught the content deemed essential and necessary by the state. Standards allow teachers and parents to assess student progress.

Curriculum is made up of the methods and techniques used by teachers to explain key concepts and subject areas. Curriculum is established by teachers and local school leaders.

INTRODUCTION

In 2010, North Carolina adopted the Common Core State Standards into its Standard Course of Study for English and Math, with statewide implementation beginning in 2012-13. To complement the Common Core, North Carolina implemented the newly developed Essential Standards as the parallel Standard Course of Study in all remaining areas of study including science, social studies, information and technology, world languages, arts education, occupational course of study, healthful living, guidance, and English as a Second Language. The standards set by the Common Core and Essential Standards define the knowledge and skills students should acquire by the end of each school year from Kindergarten through 12th grade.

While they have been the topic of much debate recently, in North Carolina and nationally, Common Core and the Essential Standards do not dictate the curriculum taught by North Carolina's teachers, which consists of the methods and techniques used by teachers to explain key concepts and subject areas. Local school leaders are responsible for making decisions about the curriculum that they choose to deliver to students based on the statewide Standard Course of Study (whether it is the Common Core or something else). In addition, local schools and districts may offer electives and coursework that go above and beyond the Standard Course of Study's content standards. **Classroom instruction is a partnership between the state, which sets content standards in the Standard Course of Study, and local educators who determine which curriculum materials they will use to deliver instruction to reach standards set by the state**.

COMMON CORE STATE STANDARDS

In the past, each state set its own standards, leading to results that varied widely from state to state, and making it difficult to compare performance across states or to design assessments or materials aligned with multiple states' different standards. The Common Core grew out of a 20-year effort to design a set of standards that would be rigorous and facilitate interstate collaboration while retaining local control over curricular decisions.

The effort started with the National Council of Teachers of Mathematics publishing in 1989 what was intended to be a consensus statement of mathematics standards. The publication helped spur a period of widespread, state-led development of standards and assessments, which coincided with broad rejection of the idea of creating *national standards*. The federal No Child Left Behind Act of 2002 required states to develop proficiency standards, but left it to each state to set its own standards. But at around the same time, international data showed the U.S. badly underperforming other countries, particularly in math, leading policymakers to become concerned that low standards were holding back students and states' economic development efforts. In response, the organization Achieve, led by governors and business leaders, sparked the American Diploma Project, an effort by 30 states to align high school graduation requirements with entrance require-

ments for colleges and work-based training programs. Through this project, state leaders discovered substantial agreement among states on what students should be able to know and do in English language arts (ELA) and mathematics.

On the heels of this work, in 2007, an alliance of state education leaders (the Council of Chief State School Officers) and the National Governors Association (NGA) issued a report calling for a "common core of internationally benchmarked standards in math and language arts for grades K-12 to ensure that students are equipped with the necessary knowledge and skills to be globally competitive."[1] In 2009, they invited state leaders to participate in an effort to develop common standards. Nearly every state agreed to participate (48 states). The group developed committees of educators and subject matter experts from across the country to develop standards for every grade level, K-12. By 2012, 46 states and the agency that runs schools on military bases in the U.S. and abroad had signed on and agreed to adopt the standards in their entirety, though every state retained discretion to add up to 15 percent locally developed standards.

North Carolina adopted the Common Core State Standards in 2010 as its Standard Course of Study for English language arts and mathematics and began implementation statewide in all public schools in the 2012-13 school year. The standards outline what each student should learn by the end of each grade level so that teachers and parents can assess student progress. For grades K-8, grade-by-grade standards exist in English language arts/literacy and mathematics. For grades 9-12, the standards are grouped into grade bands of 9-10 grade standards and 11-12 grade standards. Supporters of the standards argue that they are:

1. Research and evidence based
2. Clear, understandable, and consistent
3. Aligned with college and career expectations
4. Based on rigorous content and the application of knowledge through higher-order thinking skills
5. Built upon the strengths and lessons of current state standards
6. Informed by other top-performing countries to prepare all students for success in our global economy and society[2]

Opponents of Common Core argue that the standards may be too rigorous in some areas and not rigorous enough in others, or that the federal government has played too heavy-handed a role in encouraging states to adopt the standards, or in supporting two state-led consortia that have been designing Common Core-aligned assessments.

While the standards set grade-specific goals, they do not define how the standards should be taught or which materials should be used to support students. States and districts recognize that there will need to be a range of supports in place to ensure that all students, including those with special needs and English language learners, can master the standards. Even though no set of grade-specific standards can reflect the great variety of abilities, needs, learning rates, and achievement levels of students in a classroom, the standards provide checkpoints of college and career readiness for all students.

English Language Arts Standards

The standards establish guidelines for English Language Arts (ELA) as well as for literacy in history/social studies, science, and technical subjects. Because students must learn to read, write, speak, listen, and use lan-

[1] Rothman, R. (2013). *Common Core State Standards 101*. Washington, DC: Alliance for Excellent Education, citing National Governors Association, Council of Chief State School Officers, and Achieve (2008), *Benchmarking for Success: Ensuring U.S. Students Receive a World-Class Education*. Washington, DC: Author, p. 6.

[2] Common Core State Standards Initiative (2014), *About the Common Core State Standards*. Available at http://www.corestandards.org/about-the-standards/

guage effectively in a variety of content areas, the standards promote the literacy skills and concepts required for college and career readiness in multiple disciplines.

The College and Career Readiness Anchor Standards form the backbone of the ELA/literacy standards by articulating core knowledge and skills, while grade-specific standards provide additional specificity. Beginning in grade 6, the literacy standards allow teachers of ELA, history/social studies, science, and technical subjects to use their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields.

In developing the English Language Arts standards, Common Core focused on a few fundamental shifts in curriculum to guide student learning. These key shifts include:

- ***Regular practice with complex texts and their academic language:*** to prepare students for the demands of college- and career-level literature and vocabulary.

- ***Reading, writing, and speaking grounded in evidence from texts, both literary and informational:*** to ensure that students are capable of answering text-dependent questions based on a specific reading, rather than a student's prior knowledge or experiences.

- ***Building knowledge through content-rich nonfiction:*** to help students develop strong general knowledge and an improved vocabulary through informational nonfiction readings in history, social sciences, technical studies, and the arts.

MATHEMATICS STANDARDS

For more than a decade, research studies of mathematics education in high-performing countries have concluded that mathematics education in the United States must become substantially more focused and coherent in order to improve mathematics achievement in this country. To deliver on this promise, the mathematics standards are designed to address the problem of North Carolina's previous mathematics curriculum, which tended to be "a mile wide and an inch deep." North Carolina's math curriculum has been criticized for offering a wide and expansive overview of many various topics, at the expense of diving deeper into topics so that students can gain a deep understanding of how mathematics principles really work. Therefore, the new math standards provide clarity and specificity rather than broad general statements. The development of the standards began with research-based learning progressions detailing what is known today about how students' mathematical knowledge, skill, and understanding develop over time.

The Common Core concentrates on a clear set of math skills and concepts. Students will learn concepts in a more organized way both during the school year and across grades. The standards encourage students to solve real-world problems. The knowledge and skills students need to be prepared for mathematics in college, career, and life are woven throughout the mathematics standards. However, the mathematics standards do not include separate Anchor Standards like those used in the ELA/literacy standards.

In developing the Mathematics standards, Common Core again focused on a few fundamental shifts in curriculum to guide student learning. These key shifts include:

- ***Greater focus on fewer topics:*** to ensure that mathematics teachers cover fewer topics in greater detail rather than provide a superficial outline of all topics. The concentrations on a grade-level basis are as follows:

    - Grades K–2: Concepts, skills, and problem solving related to addition and subtraction

- Grades 3–5: Concepts, skills, and problem solving related to multiplication and division of whole numbers and fractions
- Grade 6: Ratios and proportional relationships, and early algebraic expressions and equations
- Grade 7: Ratios and proportional relationships, and arithmetic of rational numbers
- Grade 8: Linear algebra and linear functions

- ***Coherence and linking of topics across grades:*** to ensure that mathematics topics are approached as interwoven and connected concepts that can be developed further from grade to grade.

- ***Rigor:*** to pursue conceptual understanding, procedural skills and fluency, and application with equal intensity.
  - Conceptual Understanding: Students will be taught to view math from a conceptual standpoint and apply key concepts like place value and ratios across a number of different perspectives.
  - Procedural Skills and Fluency: Students will utilize speed and accuracy for calculations in order to further develop more complex skills.
  - Application: Students will be encouraged to apply mathematical concepts in real-life situations to improve problem-solving capabilities.

NORTH CAROLINA ESSENTIAL STANDARDS

North Carolina's Essential Standards constitute its Standard Course of Study for science, social studies, information and technology, world languages, arts education, occupational course of study, healthful living, guidance, and English as a Second Language. The Essential Standards were written using the Revised Bloom's Taxonomy (RBT), a model for qualitative expression of different types of thinking. The RBT was chosen because it has well-defined verbs and is built on modern cognitive research that will help progress students towards the complex thinking expected of 21st Century graduates. The RBT categorizes both the **cognitive process** and the **knowledge dimension** of the standards.

1. ***Cognitive Process Dimension:***
   The cognitive process refers to the verbs used in the standard. The RBT has specific definitions for all the verbs used in its model. For example:

   a. ***Explaining*** requires constructing a cause-and-effect model of a system (e.g. explain the recent downturn in the global economy)
   b. ***Inferring*** requires drawing a logical conclusion from presented information (e.g. In learning a foreign language, infer grammatical principles from examples)

2. ***Knowledge Dimension*:**
   The knowledge dimension is a way to categorize the type of knowledge to be learned. For instance, in the standard "The student will understand the concept of equality as it applies to solving problems with unknown quantities", the knowledge to be learned is *"the concept of equality as it applies to solving problems with unknown quantities."* Knowledge in the RBT falls into four categories:

   a. ***Factual Knowledge*** of terminology; specific dates and elements
   b. ***Conceptual Knowledge*** of classifications and categories; principles and generalizations; theories, models, and structures
   c. ***Procedural Knowledge*** of subject-specific skills and algorithms; subject-specific techniques and methods; criteria for determining when to use appropriate procedures
   d. ***Meta-Cognitive Knowledge*** of strategic knowledge; knowledge about cognitive tasks; self-knowledge

ACADEMIC STANDARD REVIEW COMMISSION

In 2014, the North Carolina General Assembly passed Senate Bill 812 which created a new Academic Standards Review Commission to review the state's English Language Arts (ELA) and Math standards and propose modifications to ensure that the standards meet the following criteria:

- Increase students' level of academic achievement
- Meet and reflect North Carolina's priorities
- Are age-level and developmentally appropriate
- Are understandable to parents and teachers
- Are among the highest standards in the nation

The Academic Standards Review Commission (ASRC) was directed to submit findings to the State Board of Education and the NC General Assembly. The legislation directed the State Board of Education to consider the recommendations of the ASRC but decision-making for revising the standards was left to the State Board of Education's authority.

After 15 months of meetings, the Commission was expected to recommend changes to the standards used in North Carolina. Instead, it issued a series of suggestions for both English Language Arts (ELA) and math, after scuttling its plans for mathematics. The preliminary recommendations for math included adopting the Minnesota standards for grades K-8, and returning to the old math standards in high school (Algebra I-Geometry-Algebra II). When the changes were voted down, the ELA recommendations were revised to include math.

The preliminary recommendations were available for months before the final vote in December. Commission members met a number of times before then, but until the last day it seemed fairly certain that the preliminary recommendations would become the final recommendations. It was a surprise to many at the final meeting when the Commission's preliminary math recommendations were voted down.[3]

The ASRC submitted their final report on December 31, 2015.[4]

In March 2016, the State Board of Education heard an overview of the history and process for evaluating and revising the academic standards of the state.[5]

In May 2016, NC DPI announced that it was seeking public feedback on high school math standards. NC DPI reviews the state's standard course of study on a five-year cycle per subject and mathematics is currently under review. As proposed, the changes could go into effect as early as the fall of 2016. According to a NC DPI press release in May 2016, action could occur at the June 2016 meeting of the State Board of Education.[6]

For more information on North Carolina's Standard Course of Study visit
http://www.dpi.state.nc.us/curriculum/.

For more information on the Common Core State Standards visit http://www.corestandards.org/.

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[3] Granados, A., Controversy rages over Common Core Commission recommendations.
Available at https://www.ednc.org/2016/01/06/controversy-rages-over-common-core-commission-recommendations/.
[4] The North Carolina Academic Standards Review Commission Report of Findings and Recommendations. Available at http://3e9eq82l8dmn2cmrkf23oogn-wpengine.netdna-ssl.com/wp-content/uploads/2016/01/NC-Academic-Standard-Review-Commission.pdf.
[5] Monthly Meeting of the North Carolina State Board of Education, 3/3/2016.
Available at https://eboard.eboardsolutions.com/Meetings/ViewMeetingOrder.aspx?S=10399&MID=2320.
[6] NC DPI, Public Feedback Sought on High School Mathematics Standards.
Available at http://www.dpi.state.nc.us/newsroom/news/2015-16/20160504-01.