

OKLAHOMA ACADEMIC STANDARDS

MATHEMATICS

WHAT YOU NEED TO KNOW



OKLAHOMA STATE DEPARTMENT OF
EDUCATION
— CHAMPION EXCELLENCE —



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OVERVIEW OF THE NEW OKLAHOMA FOR ENGLISH LANGUAGE ARTS (ELA)

Development:

- Writing teams with 38 Oklahoma representatives from PK-12 and higher education wrote the Oklahoma Academic Standards for English Language Arts and Mathematics, meeting in person on 23 occasions and several times virtually over a six-month period.
- A draft team of Oklahoma representatives from PK-12, higher education, and career technology reviewed multiple draft versions of the English language arts and math standards and provided feedback to the writing teams. This work was completed in person and virtually.
- Between August 2015 and November 2015, the Oklahoma State Department of Education (OSDE) facilitated a number of focus groups. The following groups reviewed the third draft of the Oklahoma Academic Standards and provided feedback to the writing teams.
 - PK-12 educators
 - Higher education
 - Organizations representing students with disabilities
 - Organizations representing English language learners
 - Business
 - Students
 - Parents
 - Community
 - Native American tribes
 - Career and technology education
 - Legislators
 - Subject matter experts

Resources that informed the development of the new standards:

- Oklahoma Priority Academic Student Skills (PASS) standards for English language arts (2010) and mathematics (2009)
- Minnesota, Nebraska, South Carolina, Texas, and Virginia academic standards
- ACT – English language arts and mathematics
- National Assessment of Educational Progress (NAEP) – English language arts and mathematics

ACADEMIC STANDARDS AND MATHEMATICS

Shifts from Priority Academic Student Skills (PASS) to the new Oklahoma Academic Standards for English Language Arts and Mathematics focus on:

- Mathematical actions and processes for PK-12
- Teaching reading and writing foundation skills to mastery
- Integrated reading and writing
- Depth of knowledge to support development and refinement skills
- Eight consistent overarching standards in English language arts for PK-12
- Recursive learning – students will revisit language arts concepts
- Critical thinking and real-world applications
- The addition of multimodal literacy standards
- Connections between mathematics and literacy
- Increased clarity for educators
- Strong vertical progressions: In mathematics standards, topics and scientific reasoning build PK-Algebra 2; and in English language arts, skills and concepts increase in rigor and complexity PK-12 in both the reading and writing strands.

Definitions:

- The standards are written in such a way that students are asked to analyze data and develop explanations from data, read increasingly complex texts, synthesize information, and apply it to real-world situations.
- Standards represent what students should know and be able to do, what they might be asked to do, and how well they do it at a grade level or for a course; local schools and teachers choose instructional materials, create lesson plans, and establish reading lists.

Purpose of the new Oklahoma Academic Standards for English Language Arts and Mathematics:

- Prepare students to be college- and career-ready
- Provide research-based learning progressions by grade and skill
- Provide grade level-appropriate standards that are clear, coherent, concise, and measurable for students, educators, and parents
- Support authentic/real-world applications
- Create standards that are accessible for all students

OKLAHOMA ACADEMIC STANDARDS

Purpose:

The purpose of the Oklahoma Academic Standards for Mathematics writing team is to write standards that:

- Prepare students to be college- and career-ready
- Provide horizontal and vertical progressions for learning in PK-12 mathematics
- Are grade-level appropriate
- Are clear, coherent, concise, and measurable
- Support authentic/real-world applications
- Are research based
- Are accessible for all students

Process:

Steering Committee

- The Steering Committee developed goals and a process for revision of the Oklahoma Academic Standards for Mathematics.
- The Steering Committee developed a process for selecting members of the Oklahoma Academic Standards for Mathematics writing team.

Steering Committee Members

- General Leo J. Baxter, State Board of Education member
- Barbara Bayless, reading specialist at James Griffith Intermediate in Choctaw
- Cathryn Franks, State Board of Education member
- State Superintendent of Public Instruction Joy Hofmeister, Chair
- Elaine Hutchison, mathematics teacher at Fairview Public Schools
- Glen D. Johnson, Chancellor of the Oklahoma State Regents for Higher Education
- Mautra Jones, parent, Oklahoma City Public Schools
- Dr. Cindy Koss, Oklahoma State Department of Education (OSDE) Deputy Superintendent for Academic Affairs and Planning
- Dr. Marcie Mack, State Director of Oklahoma Career and Technology Education
- Don Raleigh, Superintendent of Pryor Public Schools
- Deby Snodgrass, Oklahoma Secretary of Commerce and Tourism

PURPOSE & PROCESS

Steering Committee Meetings

- The Steering Committee met seven times between January 2015 and January 2016.

Writing Team

- Members of the writing team – which includes representatives of PK-12 and higher education – attended on-site meetings and communicated online between May 2015 and November 2015 to write the Oklahoma Academic Standards for Mathematics.

Public Comments of Draft Reviews:

July 2015

The **second draft** of the Oklahoma Academic Standards for Mathematics were made available for public comment in the following ways:

- At town hall meetings at the EngageOK Conference
- In online surveys at EngageOK
- On the Oklahoma State Department of Education website
- Via email to stakeholder groups

September 2015

The **third draft** of the Oklahoma Academic Standards for Mathematics were made available for public comment in the following ways:

- In a Feedback Toolkit posted on the Oklahoma State Department of Education website
- In OSDE webinars for stakeholder input
- At content consortiums and conferences (e.g. Oklahoma Council of Teachers of Mathematics; Oklahoma Mathematics Alliance; Oklahoma Math Success Group, which includes mathematicians from all public universities and colleges in Oklahoma; Teaching and Learning Advisory Group (which includes assistant superintendents, chief academic officers, and district curriculum directors, etc.)
- Sent to key stakeholders to share with their organizations
- Sent to reviewers of standards used and recommended by the Thomas B. Fordham Institute
- Sent to Technical Advisory Committee for State Assessment
- Sent to the Department of Commerce, Department of Career Technology, and Oklahoma State Regents for Higher Education

Focus Groups

To ensure that numerous stakeholders had an opportunity to provide feedback on the Oklahoma Academic Standards for Mathematics, in October 2015 the OSDE convened focus groups representing PK-12 education, higher education, business and industry, parents and students, community members, and legislators.

Focus Groups/Stakeholder Feedback:

October 1, 2015	Parents and Students Focus Group
October 2, 2015	School Counselors Consortium Meeting
October 2, 2015	Teaching and Learning Advisory Group
October 8, 2015	Business Focus Group
October 8, 2015	Community Agencies Focus Group
October 8, 2015	Special Populations Focus Group (Students with disabilities, English language learners, Gifted & Talented)
October 8, 2015	OSDE Staff Focus Group
October 9, 2015	Teachers Focus Group
October 9, 2015	Administrator Focus Group
October 9, 2015	Diverse Learner Focus Group (Native American, Hispanic, and African American representatives)
October 16, 2015	Members of the Oklahoma House of Representatives
October 16, 2015	Members of the Oklahoma Senate

Recommendations and Reviews:

Recommendations to the Oklahoma State Regents for Higher Education – December 2015

- Fourth draft of Oklahoma Academic Standards for Mathematics submitted to the Oklahoma State Regents for Higher Education for review and to certify college and career readiness.

Recommendations to the Oklahoma Department of Commerce and Oklahoma Department of Career and Technology – January 2016

- Fourth draft of the Oklahoma Academic Standards for Mathematics submitted to the Oklahoma Department of Commerce and Oklahoma Department of Career and Technology.

Recommendations to the Oklahoma State Board of Education – January 2016

- A detailed report including the legislation for revised Oklahoma Academic Standards for Mathematics, the process utilized in the revision, stakeholder feedback, significant shifts from PASS 2009 to the new standards, and implications for school implementation will be provided to the Oklahoma State Board of Education.

Recommendation to the Oklahoma State Legislature – February 2016

- A detailed report including the need for revised Oklahoma Academic Standards for Mathematics, the process utilized in the revision, stakeholder feedback, significant shifts from PASS 2009 to the new standards, and implications for school implementation will be provided to the Oklahoma Legislature.

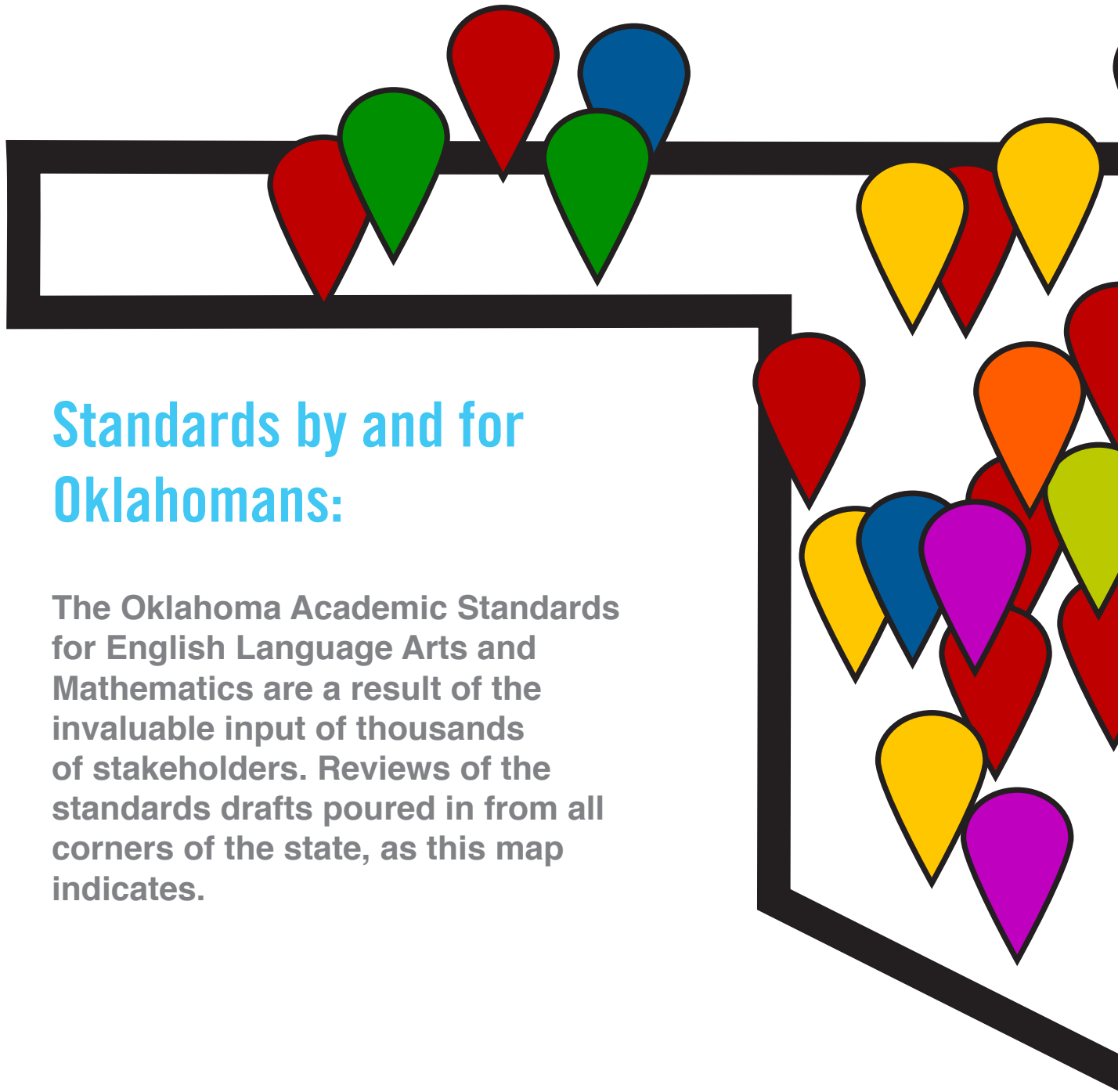
Outside Reviewers of Drafts of the Oklahoma Academic Standards for Mathematics:

- Southern Regional Education Board (SREB)
- South Central Comprehensive Center
- College and Career Readiness and Success Center
- Oklahoma Educated Workforce Initiative (OEWI)-commissioned representatives from the Indiana Association of Supervision and Curriculum Development
- Dr. Christopher Yakes, Salem State University, Thomas J. Fordham Institute reviewer
- Oklahoma Technical Advisory Committee
- Oklahoma State Regents for Higher Education
- Oklahoma Department of Career and Technology Education
- Oklahoma Department of Commerce
- Oklahoma Teaching and Learning Advisory Group
- Restore Oklahoma Public Education
- Partnership for 21st Century Skills (P21)
- Oklahoma Council of Teachers of Mathematics
- Oklahoma State School Boards Association (OSSBA)
- Oklahoma Counselors Advisory Group

Resources for Standards Writing:




- Oklahoma PASS 2009
- Various state standards for Mathematics (e.g. Minnesota, Texas, and Massachusetts)
- ACT Standards
- National Assessment of Educational Progress (NAEP) Frameworks




OKLAHOMA ACADEMIC STANDARDS






Standards by and for Oklahomans:

The Oklahoma Academic Standards for English Language Arts and Mathematics are a result of the invaluable input of thousands of stakeholders. Reviews of the standards drafts poured in from all corners of the state, as this map indicates.

-  2nd & 3rd Draft Feedback
-  ELA Consortium Review
-  ELA Town Hall

-  Math Town Hall
-  Webinar Participants
-  Focus Groups

-  Federal Programs Summit
-  Teaching & Learning Advisory Group
-  Oklahoma Association of School Administrators Executive Meeting

FEEDBACK MAP



REVIEWS & FEEDBACK

By the numbers...



Oklahoma Academic Standards Reviewers

- College and Career Readiness and Success Center
- Cooperative Council for Oklahoma School Administration (CCOSA)
- K20 Center
- Oklahoma Department of Career Technology
- Oklahoma Department of Commerce
- Oklahoma Educated Workforce Initiative (OEWI)
- Oklahoma Public School Resource Center (OPSRC)
- Oklahoma School of Science and Mathematics (OSSM)
- Oklahoma State Regents for Higher Education
- Oklahoma State School Boards Association (OSSBA)
- Oklahoma Technical Advisory Committee
- Oklahoma Teaching and Learning Advisory Group
- Partnership for 21st Century Skills (P21)
- South Central Comprehensive Center, University of Oklahoma (SC3)
- Southern Regional Education Board (SREB)
- Dr. Larry Gray, Professor of Mathematics, University of Minnesota
- Shelli Klein (for the Thomas B. Fordham Institute)
- Dr. Sandra Stotsky, Professor Emeritus in the Department of Education Reform, University of Arkansas
- Dr. Christopher Yakes, Salem State College (for the Thomas B. Fordham Institute)

The Feedback

“The proposed Oklahoma standards do an excellent job of developing the various mechanical tools for mathematical calculation, starting from computation and moving to algebraic manipulation.”

— Edmund Harris, Clinical Assistant Professor of Mathematics, University of Arkansas

“The standards in math represent a clear progression from pre-k to 12th grade.”

— Dr. Belinda Biscoe, Research Psychologist, University of Oklahoma

“These are standards that will truly raise the bar for every student, moving Oklahoma into a new realm of possibilities for public education.”

— Lynn D. Barnes, Senior Executive Director of PK-12 Academics, Oklahoma City Public Schools

“We find that the new standards are rigorous for all students. We value the visible vertical alignment and connections among grade levels that these new standards possess.”

— Julie B. Klingensmith, President, Oklahoma Council of Teachers of Mathematics

“I can say with confidence that these standards, in principle, provide the necessary structure to support students as they proceed through the K-12 mathematics curriculum and, eventually, to college.”

— Dr. John Paul Cook, Assistant Professor of Mathematics, Oklahoma State University

“We believe that the standards represent an upgrade over the current Oklahoma math and reading standards and will help ensure that students in our state are college- and career-ready.”

— Brent Bushey, Executive Director, Oklahoma Public School Resource Center

“I appreciate the detailed attention given to the pre-writing process and the incorporation of electronic media.”

— Dr. Robert Con Davis-Undiano, English Professor & Executive Director of *World Literature Today*, University of Oklahoma

“Your transparency has been wonderfully refreshing, and your desire to use all ELA educators in the process has been especially appreciated.”

— Uwe Gordon, Principal, Stillwater High School & Walter Howell, Director of Secondary Education, Stillwater Public Schools

“We appreciate that Superintendent Hofmeister has included the business community at the table. In order to give all Oklahoma students a shot at their dream job, it is imperative that our standards be rigorous and relevant.”

— Jennifer Monies, Executive Director, Oklahoma Educated Workforce Initiative

OKLAHOMA ACADEMIC STANDARDS CHECKLIST



TRANSPARENT PROCESS

- Written by **Oklahoma** educators for **Oklahoma** educators
- Reviews and feedback focus groups; including **Oklahoma**:
 - Content experts
 - Higher education
 - Commerce
 - Career Tech
 - Business leaders



FOUNDATIONS FOR EXCELLENCE

- Rigorous
- Clear
- Assessable
- Grade-to-grade vertical progressions
- Fundamentals of mathematics
- Early literacy foundational skills



LEARNING OUTCOMES

- Critical thinking
- Problem solving
- Applications beyond the classroom



DISTRICT SUPPORT

- Local curriculum control
- Collaborative curriculum frameworks



ACADEMIC
STANDARDS
BY
OKLAHOMANS
FOR
OKLAHOMANS

PORTRAIT OF A COLLEGE- AND CAREER-READY STUDENT

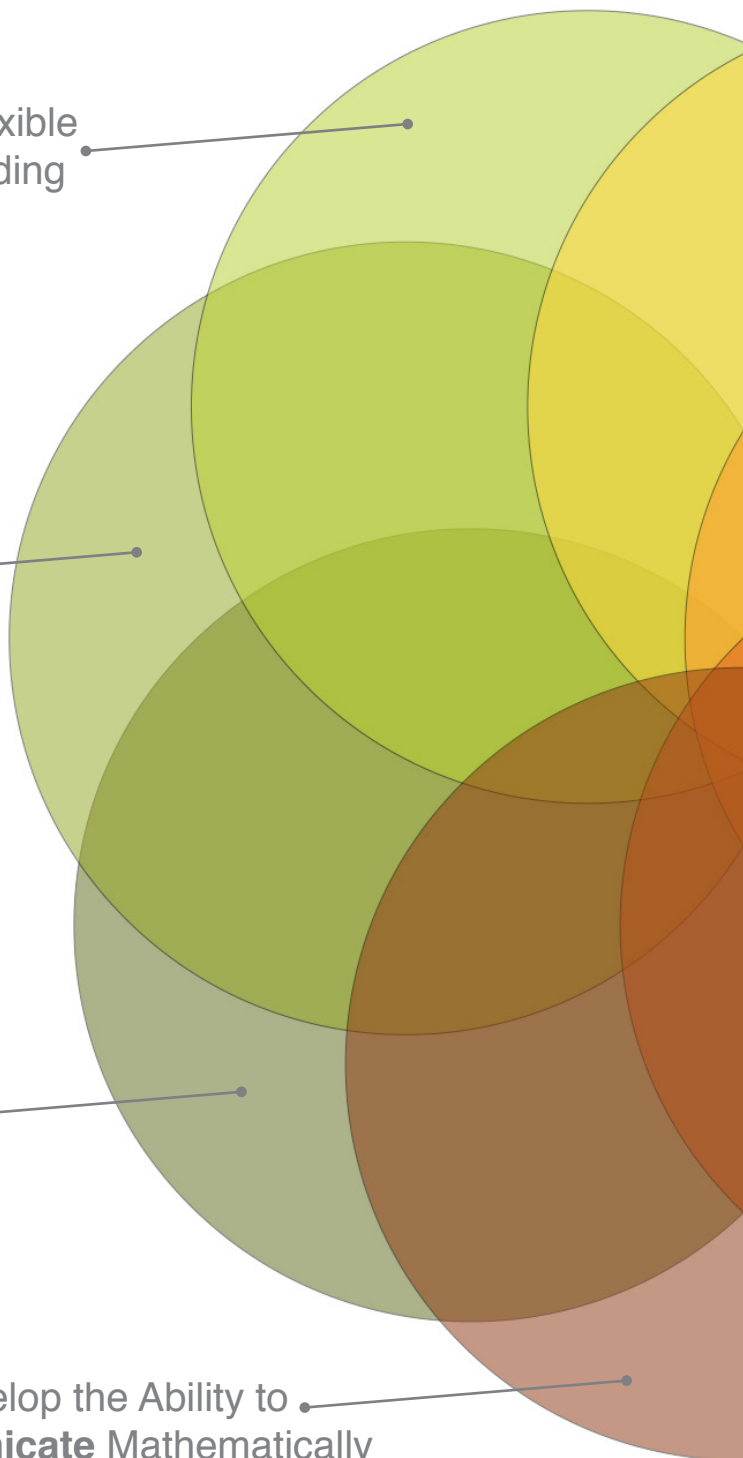
Throughout their PK-12 educational experience, mathematically literate students will:

Develop a Deep and Flexible
Conceptual Understanding

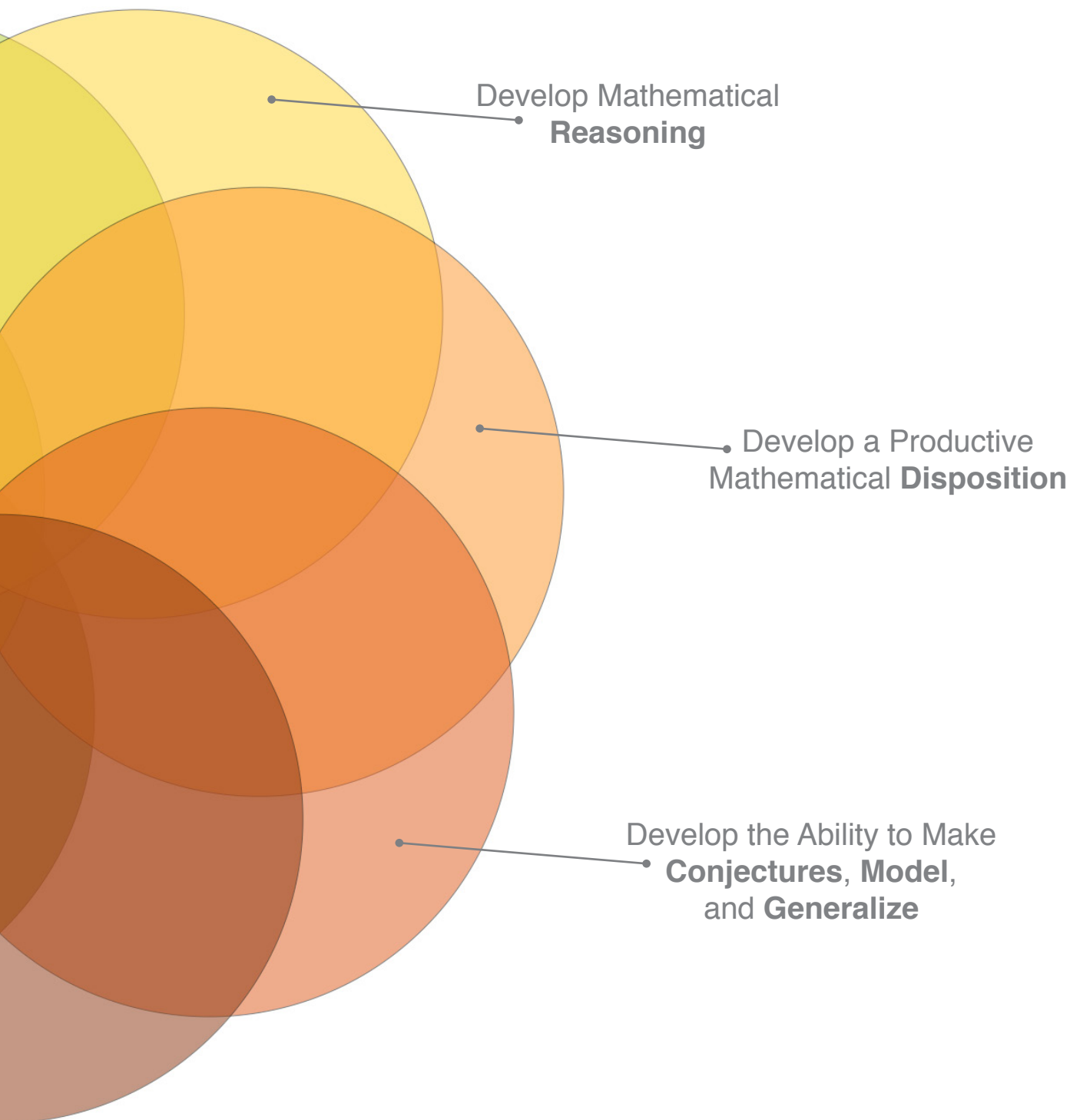
Develop an Accurate and
Appropriate Procedural
Fluency

Develop Strategies for
Problem Solving

Develop the Ability to
Communicate Mathematically



MATHEMATICAL ACTIONS AND PROCESSES simultaneously reflect the holistic nature of mathematics as a discipline in which students study patterns and relationships among quantities, numbers, and space (National Academies of Sciences, 2014) and as a form of literacy such that all students are supported in accessing and understanding mathematics for life, for the workplace, for the scientific and technical community, and as a part of cultural heritage (NCTM, 2000). To this end, the seven Mathematical Actions and Processes defined below capture the mathematical experience of Oklahoma students as they pursue mathematical literacy.



OKLAHOMA ACADEMIC STANDARDS

Dr. Stacy Reeder (Co-Chair), 22 Years of Experience

Associate Professor of Mathematics Education; Chair, Instructional Leadership & Academic Curriculum, University of Oklahoma
B.S. Ed., Secondary Mathematics Education; M.Ed., Secondary Education, Mathematics; Ph.D., Mathematics Education

Stacey Weinand (Co-Chair), 6 Years of Experience

High School Mathematics Teacher, Norman Public Schools
B.S., Mathematics; M.Ed., Mathematics Education

Dr. Darlinda Cassel (PK-4 Writing Chair), 30 Years of Experience

Associate Professor of Mathematics Education, University of Central Oklahoma
B.S., Elementary Education; M.A., Elementary Education; Ph.D., Instructional Leadership & Academic Curriculum

Dee Atkins (PK-4 Team), 24 Years of Experience

Elementary Teacher, Stillwater Public Schools
B.S., Elementary Education; M.S., Teaching, Learning & Leadership; National Board Certified Teacher

Paige Bergin (PK-4 Team), 14 Years of Experience

Instructional Coach, Union Public Schools
B.S., Elementary Education; M.Ed., Administration & Curriculum Supervision; National Board Certified Teacher; Presidential Award for Excellence in Mathematics & Science Teaching

Sara Snodgrass (PK-4 Team), 37 Years of Experience

Adjunct Professor of Instructional Leadership & Academic Curriculum, University of Oklahoma
B.S., Elementary Education; M.Ed., Instructional Leadership & Academic Curriculum; National Board Certified Teacher

Dr. Juliana Utley (5-8 Writing Chair), 34 Years of Experience

Associate Professor of Mathematics Education; Interim Associate Dean, College of Education, Oklahoma State University
B.S., Mathematics & Secondary Mathematics Education; M.S., Mathematics Education; Ph.D., Mathematics Education

George Abshire (5-8 Team), 34 Years of Experience

Middle School Mathematics Teacher, Jenks Public Schools
B.S., Health & Physical Education; M.Ed., History, Philosophy & Social Foundations of Education; National Board Certified Teacher; 1997 Oklahoma Teacher of the Year

Andrea Brock (5-8 Team), 12 Years of Experience

Mathematics Curriculum Coordinator, Moore Public Schools
B.S., Elementary Education; M.Ed., Curriculum & Instruction with an Emphasis in Mathematics Education

Nicole Shobert (5-8 Team), 11 Years of Experience

Clinical Instructor of Teaching & Curriculum Leadership, Oklahoma State University – Tulsa
B.S., Elementary Education; M.Ed., Mathematics Education; Ph.D. Candidate, Mathematics Education

MATHEMATICS WRITING TEAM

Dr. Carol Lucas (9-12 Writing Chair), 38 Years of Experience

Professor of Mathematics, University of Central Oklahoma

B.S., Education; M.Ed., Mathematics Education; Ph.D., Mathematics Education

Dr. Shannan Bittle (9-12 Team), 19 Years of Experience

Mathematics Curriculum Specialist, Union Public Schools

B.S., Mathematics Education; M.S., Mathematics; Ed.D., Educational Leadership

Shari Gierhart (9-12 Team), 27 Years of Experience

High School Mathematics Teacher, Tuttle Public Schools

B.S., Mathematics Education

Linda Hall (9-12 Team), 26 Years of Experience

Mathematics Consultant

B.S., Mathematics; M.Ed., Secondary Administration; National Board Certified Teacher

Toni Slagle Herrima (9-12 Team), 5 Years of Experience

High School Mathematics Teacher, Collinsville Public Schools

B.S., Mathematics Education; M.A., Educational Leadership

Julie Owens (9-12 Team), 18 Years of Experience

Mathematics Curriculum Director, El Reno Public Schools

B.S., Mathematics Education; M.Ed., Curriculum, Instruction & Assessment

Dr. Courtney Lockridge (PK-12 Scribe), 14 Years of Experience

Curriculum Director, Piedmont Public Schools

B.A., Government and Psychology (pre-law); M.B.A.; Ph.D., Educational Administration & Curriculum Supervision

Alana McAnally (PK-12 Assessment), 11 Years of Experience

Director of Developmental Mathematics, University of Central Oklahoma

B.S., Mathematics Education; M.Ed., Curriculum & Instruction

Robbyn Glinsmann, 15 Years of Experience

Director of Elementary Mathematics, Oklahoma State Department of Education

B.S., Elementary Education; M.Ed., Curriculum & Instruction

Levi Patrick, 9 Years of Experience

Director of Secondary Mathematics, Oklahoma State Department of Education

B.S., Mathematics Education; M.Ed., Mathematics Education

TIMELINE

Since March 2015, the Oklahoma State Department of Education (OSDE) has been developing new standards in English language arts and mathematics. Soliciting and gathering feedback from a variety of stakeholders has been a vital part of the process. At town halls, in focus groups and content consortiums, and through surveys and expert reviews, thousands have made their opinions known.

March 2015

- Steering Committee designs the process for writing the Oklahoma Academic Standards for English Language Arts (ELA) and Mathematics.

April 2015

- Writing teams assemble for English language arts and mathematics.
- Priority Academic Student Skills (PASS) standards surveys are made available for public comment and submitted to writing teams to inform the creation process of new standards.

May 2015

- Writing teams begin writing new standards and review public comments on old PASS standards.

June 2015

- Initial draft of new standards is reviewed by representatives from institutions of higher education, the Oklahoma Department of Commerce, Oklahoma Department of Career and Technology Education, Restore Oklahoma Public Education (ROPE), and the OSDE's Teaching and Learning Advisory Group. Input goes to writing teams to consider for second draft.

July 2015

- Second draft of new standards opens for public comment through the OSDE website, town hall meetings at OSDE's EngageOK summer conference, online surveys available throughout EngageOK, and surveys sent to diverse stakeholder groups.

August 2015

- External reviewers provide written feedback on second draft. Reviewers include consultants for the Southern Regional Education Board (SREB), Partnership for 21st Century Skills (P21), and the South Central Comprehensive Center (SC3) at the University of Oklahoma, which includes feedback from the College and Career Readiness and Success Center, SC3 staff, and Debacker Consulting.
- Experienced authors of other states' academic standards consult with writing team leaders by phone. Dr. Larry Gray, professor at the University of Minnesota's School of

Mathematics, works with Dr. Stacy Reeder, co-chair of the mathematics writing team. Dr. Sandra Stotsky, professor emerita at the University of Arkansas's Department of Education Reform, works with Dr. Matt Hollrah, co-chair of the ELA writing team.

September 2015

- Third draft of new standards is made available for public comment with a Feedback Toolkit on the OSDE website.
- OSDE organizes webinars for stakeholder input on third draft of ELA and mathematics standards.
- Stakeholders are invited to provide feedback on third draft at content consortiums and conferences for groups including the Oklahoma Council of Teachers of English, Oklahoma Reading Association, Oklahoma Council of Teachers of Mathematics, Oklahoma Mathematics Alliance, Oklahoma Math Success group (which includes mathematicians from all universities and colleges in Oklahoma), and the OSDE Teaching and Learning Advisory Group (which includes assistant superintendents, chief academic officers, district curriculum directors, and other school officials).
- Third draft is sent to key stakeholders including chambers of commerce, educators, parents, Oklahoma tribal representatives, and others.
- Third draft is sent to reviewers of standards used and recommended by the Thomas B. Fordham Institute.
- Third draft is sent to the OSDE Technical Advisory Committee (TAC) for State Assessment.
- Third draft is sent to the Oklahoma Department of Commerce, Oklahoma Department of Career Technology, and Oklahoma State Regents for Higher Education.

October 2015

- Third draft of new standards is given to focus groups – representing business, parents, students, teachers, administrators, school board members, special populations, diverse populations, and legislators – for their feedback.

November 2015 – January 2016

- Fourth draft of new standards is sent to numerous draft reviewers.

December 2015 – January 2016

- Fourth draft of new standards is presented to the Oklahoma Department of Commerce, Oklahoma Department of Career and Technology Education, educator organizations, representatives of tribal nations, parents, and the business community.
- Fourth draft is provided to the Oklahoma State Regents for Higher Education to certify that the standards are college- and career-ready.
- New Oklahoma Academic Standards are presented to the Oklahoma State Board of Education to approve and adopt.

February 2016

- State Board-approved version of standards will be presented to the Oklahoma Legislature.

PRESS RELEASES

State Board of Education strengthens standards-making process

OKLAHOMA CITY (Jan. 30, 2015) — In the first State Board of Education (SBOE) meeting helmed by new State Superintendent of Public Instruction Joy Hofmeister, board members on Thursday passed several measures to strengthen the process by which Oklahoma will develop new K-12 academic standards for English language arts and mathematics. In addition to adopting a tough policy to ensure openness and transparency, the SBOE approved an executive director for the standards' development process.

Supt. Hofmeister also officially joined the Oklahoma Education Standards Steering Committee. In proposing a transparency policy for the steering committee, Hofmeister said it is critical that the standards-creation process include feedback from stakeholders in the state's public education system.

“Because the steering committee is not statutorily subject to the Open Meetings Act, I think it's important to meet that law's standard of openness and even exceed it where possible,” Hofmeister said. “Many Oklahomans are interested in seeing that the result of this process will be first-rate academic standards that are college- and career-ready.”

The SBOE established the steering committee late last year after Gov. Mary Fallin signed a measure repealing Common Core academic standards. House Bill 3399 mandated the state develop and adopt its own standards for English language arts and mathematics.

Under the policy passed unanimously by the state education board:

- Meeting notices will be filed with the Secretary of State and posted on the State Department of Education (SDE) website at least 48 hours before all meetings;
- Meeting agendas will be posted on the SDE website at least 24 hours before all meetings;
- All meetings are open to the public;
- The steering committee can only meet in closed session if a motion to do so is approved by a 3/4ths vote of members present for a quorum; and
- The steering committee chairperson will ensure that a summary of each meeting is posted on the SDE website within 48 hours of adjournment.
-

Hofmeister and board members expressed hope that their new plan to record audio and/or video of the meetings would increase involvement for all stakeholders to more easily follow the standards-making process.

Hofmeister became a member of the steering committee, replacing State Board of Education member Bill Price. He voluntarily stepped down from the steering committee because more than two members on that panel would constitute an SBOE quorum.

Board members also hired Dr. William J. Radke to serve as executive director of the standards-creation process. Radke was provost and vice president of academic affairs at the University of Central Oklahoma (UCO) for eight years until his retirement in 2013.

“I appreciate this opportunity,” he told board members. “Here’s an opportunity for someone who has been in higher education in Oklahoma for 40 years ... to have one last opportunity to make a difference in the state of Oklahoma.”

Radke began work at UCO in 1975 as a professor. In 2000, he became assistant dean of the Office of Sponsored Research and Grants, and he served in several other academic leadership positions until he was named provost and VP of academic affairs in 2005.

While at UCO, Radke was involved in the university’s transformative learning initiative, curriculum development and multiple leadership programs.

He has a doctorate in zoology from the University of Arizona, as well as a bachelor’s degree in science education and a master’s degree in biology from Minnesota State University.

Radke noted that the process of creating academic standards, which by law must be implemented by the 2016-17 school year, will utilize the experiences of other states.

“We don’t have to start from zero,” he said. “We can make this our own for Oklahoma students and make it the best it can possibly be.”

Steering committee chair Amy Ford said the panel will next meet at 9 a.m. Monday, Feb. 16, to hear from national experts on academic standards. The tentative location for the meeting is at the State Capitol in the Governor’s large conference room on the second floor. The meeting will continue on Feb. 17 if more time is needed.

Hofmeister, a former board member appointed by Gov. Fallin, said she was excited to rejoin the SBOE.

“I look forward to working with this board on behalf of the schoolchildren of Oklahoma,” she said. “It is a new day for education in our state, and together we can do great things.”

Academic standards steering committee to hear from national experts on developing standards Feb. 16-17

OKLAHOMA CITY (Feb. 12, 2015) — The steering committee that will determine development of the K-12 academic standards will meet Monday to hear from a trio of experts on the subject.

The meeting begins at 8:30 a.m. at the Oklahoma State Regents for Higher Education, Suite 200, 655 Research Parkway in Oklahoma City. The Oklahoma Academic Standards Steering Committee meets again at 9 a.m. Tuesday to discuss the experts’ presentations and begin developing Oklahoma’s standards-writing process.

Both meetings are open to the public and will be streamed online at <http://jwplayer.onenet.net/streams/sde.html>. The link will also be accessible through the Oklahoma State Department of Education (OSDE) website at sde.ok.gov.

The State Board of Education (SBE) is holding a special meeting at the same place and time Monday and Tuesday to allow board members to participate in the process.

The steering committee meeting will be the first for its newest member, state Superintendent of Public Instruction Joy Hofmeister. She replaces Bill Price, who is also an SBE member.

“The steering committee has an exciting opportunity to learn from experts who were instrumental in developing academic standards in other states,” Hofmeister said. “It is critical that Oklahomans have strong, rigorous academic standards to help ensure our students are prepared for college and career.

Her sentiments were echoed by steering committee chair Amy Ford, who also sits on the State Board of Education.

“The board felt that it was vital that a wide range of voices be heard as we explore the best processes that will ultimately guide our state in writing the best English language arts and math standards that ensure the children of Oklahoma are given every opportunity to succeed in whatever endeavor they choose,” Ford said.

The meetings will also be the first to include the steering committee’s newly named executive director, Dr. William Radke. A former provost and vice president of academic affairs at the University of Central Oklahoma, he is now in charge of managing the process that the steering committee develops for creating the new standards.

“During this process, it will be critical to involve all stakeholders in a transparent and inclusive way,” Radke said. “For that reason the forums next week are open to the public, webcast and available online after the event. Many opportunities for comment will be made available as the process proceeds.”

Monday’s speakers include:

- Dr. Larry Gray, professor of mathematics, University of Minnesota
- Dr. Jane F. Schielack, associate dean for assessment and pre-K education, Texas A&M University
- Dr. Sandra Stotsky, professor of education reform, University of Arkansas

Gray became involved in standards development about 15 years ago as a vocal critic of Minnesota’s then-math standards. In 2003, he served on a committee that rewrote the standards. Three years later, Gray co-chaired a panel that revised the 2003 standards.

Schielack helped develop the National Council of Teachers of Mathematics (NCTM) professional standards for teaching mathematics and the Texas Essential Knowledge and Skills for K-8 math. On a national level, Schielack chaired the writing committee for

the NCTM Curriculum Focal Points and was a member of the NCTM Review Team of the Common Core Standards.

Stotsky was senior associate commissioner at the Massachusetts Department of Elementary and Secondary Education from 1999 to 2003, where she was in charge of developing or revising the state's K-12 standards, teacher licensure tests, and teacher and administrator licensure regulations. In 2009-2010, Stotsky served on the Common Core Validation Committee; she was one of its five members who refused to sign off on the standards as being rigorous, internationally benchmarked (comparable or competitive) or research-based.

A measure signed into law last year by Gov. Mary Fallin, House Bill 3399, directed the State Board of Education to oversee the creation of standards for English language arts and mathematics. The state Legislature must approve the new standards by the start of the 2016-17 school year.

The Oklahoma Academic Standards Steering Committee was created by the SBE to determine the process for writing the academic standards.

State Board of Education approves plan to develop English, math academic standards

OKLAHOMA CITY (March 12, 2015) — The State Board of Education today unanimously approved a process for the development of academic subject matter standards for English Language Arts and Mathematics. The proposal was submitted by the Oklahoma Academic Standards Setting Steering Committee.

The board of education had established the 10-member steering committee last year to research and recommend a plan for development of English and math standards. Under House Bill 3399, which had repealed Common Core standards, the Oklahoma State Department of Education — in collaboration with the Oklahoma State Regents for Higher Education, State Board of Career and Technology Education and the Oklahoma Department of Commerce — is tasked with developing English and Math standards for implementation by the 2016-17 school year.

“Time is of the essence with an undertaking this sizable and important, but the process is now in place for the creation of excellent academic standards,” said state Superintendent of Public Instruction Joy Hofmeister. “I am pleased that we are now under way, and I am grateful to the steering committee members for their dedication and hard work.”

The plan establishes writing teams for English and math, with teams divided by subject matter and grades bands (pre-K-first grade, second- to fourth-grade, etc.). Public feedback will be sought and collected through regional town-hall meetings and online comments.

The standards-setting steering committee next meets on March 25. More information on the standards process is available at <http://ok.gov/sde/oklahoma-academic-standards>.

Oklahoma Academic Standards Committee Receives Update from Writing Teams, First Draft Due June 1

OKLAHOMA CITY (May 20, 2015) — The Oklahoma Academic Standards Setting Steering Committee is moving forward with the development of new state academic standards in preK-12 for English language arts (ELA) and mathematics. The Committee met Tuesday at the Oklahoma State Department of Education (OSDE) to hear updates from the writing teams for ELA and mathematics.

The ELA writing team held a first draft writing session May 14-15. Dr. Jennifer Watson, co-chair of the ELA writing team, said the meetings were extremely useful. “We wanted to make sure we broadened the purpose of the [standards] document to represent 21st century skills,” she told the steering committee. The team presented the committee with eight preliminary overarching standards, including:

- Speaking and Listening
- Reading Process/Writing Process
- Vocabulary
- Critical Reading/Critical Writing
- Language
- Research
- Multiple Literacies
- Independent Reading/Independent Writing

The Mathematics writing team met May 1-2 for an in-depth writing session. Dr. Stacy Reeder, co-chair of the math-standards writing team, presented the steering committee with seven process skills established by the writing team. Those seven skills include developing:

- Deep and flexible understanding
- Accurate and appropriate procedural fluency
- Strategies for solving diverse problems
- Mathematical reasoning
- Productive mathematical disposition
- Ability to make conjectures and generalize
- Ability to communicate mathematically

“I feel very confident with them and how they are taking shape,” Reeder said.

The ELA and Mathematics writing teams will finish and present a first draft by June 1. A second draft review will be presented at the EngageOK Summer Conference July 7-9. Final drafts from each team will be presented to the steering committee by Oct. 1.

“I am extremely pleased with the work both writing teams have accomplished in such a short amount of time,” said State Superintendent of Public Instruction Joy Hofmeister. “I know we are on the right track to forming standards that will truly make a positive difference.”

Under House Bill 3399, which had repealed Common Core academic standards, the OSDE — in collaboration with the Oklahoma State Regents for Higher Education, State Board of Career and Technology Education and the Oklahoma Department of Commerce — is tasked with developing English and math standards for implementation by the 2016-17 school year.

Draft of English, math academic standards posted online for public review

OKLAHOMA CITY (July 6, 2015) — State Superintendent of Public Instruction Joy Hofmeister is encouraging interested Oklahomans to review the current version of proposed preK-12 academic standards for English language arts (ELA) and mathematics.

The drafts are available at ok.gov/sde/newstandards. Readers are also asked to fill out an online survey accompanying the standards.

“Educators from across our state have selflessly devoted their time and expertise to developing these standards under a tight timeframe, and I am grateful for their diligence,” Hofmeister said. “The State of Oklahoma is committed to creating standards that will ensure depth of knowledge and critical thinking, as well as reflecting the feedback of Oklahomans. That is why input from education stakeholders — from teachers to the general public — is critical to this process.”

In addition, the standards will be the subject of town hall meetings to be held **5:30-7 p.m. Tuesday, July 7**, at the EngageOK Summer Education Event at Oklahoma City’s Cox Convention Center. Math standards will be the subject of a meeting in Ballrooms A and B at the Renaissance Oklahoma City Convention Center Hotel, 10 N. Broadway Ave., while ELA will be the focus of a meeting in Ballrooms D and E. The public is invited to the meetings.

EngageOK is free, although registration is required. People may register onsite at the Cox Convention Center on Tuesday between 11 a.m. and 6:30 p.m., or during the conference on Wednesday or Thursday.

The conference will also include breakout sessions in which the standards-writing teams’ co-chairs will answer questions about the process.

The new standards in ELA and math were mandated last year by House Bill 3399. Under that measure, the Oklahoma State Department of Education — in collaboration with the Oklahoma State Regents for Higher Education, State Board of Career and Technology Education and the Oklahoma Department of Commerce — is tasked with developing ELA and math standards for implementation by the 2016-17 school year.

Academic standards writing teams gather feedback from education stakeholders

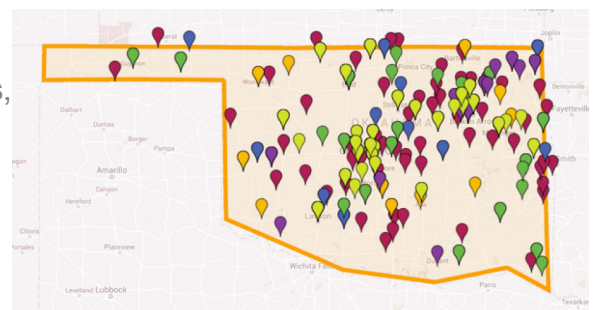
OKLAHOMA CITY (Oct. 15, 2015) — The Oklahoma State Department of Education (OSDE) and the writing teams charged with developing Oklahoma’s academic standards for English language arts and mathematics have been soliciting feedback from a spectrum of education stakeholders.

Throughout October, the standards-writing teams and OSDE staffers have received critiques of the third draft of the standards.

“This has been a thorough and comprehensive process,” said State Superintendent of Public Instruction Joy Hofmeister. “I am confident that, when complete, it will conclude with strong standards to help ensure college- and career-readiness.”

In an effort to produce exceptional standards that will prepare students for higher education and 21st-century careers, the OSDE has gathered comments from thousands of people at town halls and school district visits, in surveys and focus groups, and via content reviews, webinars and conferences.

In addition, many districts throughout Oklahoma have held “feedback parties” in which educators, administrators and parents review drafts of the standards. Cordell, Edmond, Elgin, Lawton and Tahlequah are among the districts that have held these



Pins on the map above represent districts that submitted feedback about the new Oklahoma academic standards.

Two teams are tasked with writing the Oklahoma Academic Standards for English Language Arts and Mathematics. Under House Bill 3399, signed into law by Gov. Mary Fallin in June 2014, the State Board of Education must endorse the standards before they are presented to the state Legislature for consideration. If lawmakers approve them, the standards will go to the governor for her signature. Then the OSDE will develop and produce supplemental materials to assist teachers in meeting the standards. That practice reflects the standards-making process in a number of states, including Virginia and California.

The Oklahoma Board of Education is scheduled to consider the standards at its December 2015 meeting.

Robert Con Davis-Undiano, Neustadt Professor and Presidential Professor of English at the University of Oklahoma, participated in a feedback session on the third draft of English language arts standards.

“The writers of the new English language arts standards for Oklahoma are moving slowly and deliberately through a difficult process,” said Davis-Undiano, who also serves as the executive director of *World Literature Today* magazine. “They want standards that will match or surpass the best and most ambitious ELA goals in the country.”

High-quality standards, Davis-Undiano said, are critical—and invaluable to the state’s children.

“Oklahoma students deserve to have such ambitious and positive goals. From what I have seen in discussions with the ELA team, I have every confidence that the writers will be fair minded and ambitious on behalf of our state’s future. I believe they will set high, appropriate standards for pre-K through 12 education.”

Jennifer Monies, executive director of the Oklahoma Educated Workforce Initiative, is among those who have reviewed the latest draft of the standards.

“We appreciate that Superintendent Hofmeister has included the business community at the table,” she said. “In order to give all Oklahoma students a shot at their dream job, it is imperative that our standards be rigorous and relevant. The Oklahoma business community has an important stake in making sure our state’s standards are preparing students for both college and career.”

The meetings have elicited scores of comments from reviewers. Some of them include:

- “Clarity and consistency across grades is so important.”—Parent Focus Group
- “Extensive review process by multiple external experts and stakeholder groups. Thank you for commitment to getting feedback.”—Administrator Focus Group
- “Our kids are so capable of extraordinary things. We are making progress as a state toward providing all Oklahoma kids opportunities they deserve.”—Teacher Focus Group
- “The real strength of the ELA curriculum is the opportunity for students to use critical thinking skills.”—Diverse Learners Focus Group
- “I kept coming across the word ‘knowledge,’ and while I feel this is important to obtain, we need to focus on ‘learning’ instead of regurgitating and building our knowledge.”—Student Focus Group
- “The group behind these standards clearly want to adequately prepare our students for the workforce or employment.”—Business Focus Group
- “I was very pleased to be able to hear about the whole process of the standards. Thank you for the opportunity to give my professional opinion.”—Teacher Focus Group

“Experts from higher education, common education, independent education think tanks, teachers, administrators, counselors, community agencies, students, business groups, those advocating for students with special needs, legislators and the governor’s office have provided valuable input,” said Dr. William Radke, executive director of the steering committee that developed the standards-writing process. “Every comment was and is being considered by the writing teams as they continue to tweak their work. This has been and continues to be an effort by Oklahomans for Oklahomans. Nothing could be more important for our children.”

Under HB 3399, the OSDE—in collaboration with the Oklahoma State Regents for Higher Education, State Board of Career and Technology Education and the Oklahoma Department of Commerce—must develop and implement English language arts and mathematics standards by the 2016-17 school year.

OKLAHOMA ACADEMIC STANDARDS

LEGISLATION

Under House Bill 3399, which was signed into law by Governor Mary Fallin in June 2014, Oklahoma is required to create new Oklahoma Academic Standards for English Language Arts and Mathematics by 2016. (70 O.S. § 11-103.6a.B.1)

“On or before August 1, 2016, the State Board of Education, in consultation with the State Regents for Higher Education, the State Board of Career and Technology Education, and the Oklahoma Department of Commerce, shall adopt subject matter standards for English language arts and mathematics which are college- and career-ready and will replace current standards. To be considered college- and career-ready, the standards shall be evaluated by the State Department of Education, the State Regents for Higher Education, and the Department of Commerce and be determined to be such that the standards will address the goals of reducing the need for remedial coursework at the postsecondary level and increasing successful completion of postsecondary education. The subject matter standards and corresponding student assessments for English language arts and mathematics shall be solely approved and controlled by the state through the State Board of Education.”

OVERVIEW

The new Oklahoma Academic Standards ensure that students are prepared for higher education and the workforce. Not only are these standards academically challenging, they also reflect Oklahoma values and principles. The standards-writing process has been designed to be inclusive and comprehensive, encouraging the spirit of collaboration and a healthy exchange of ideas. These standards are being created by Oklahomans for Oklahomans.

PROCESS

1. What was the process for creating the Oklahoma Academic Standards?

In February 2015, the Oklahoma Academic Standards Steering Committee heard testimony from three experts who shared processes for creating high-quality academic standards. These experts were:

- Dr. Larry Gray, Professor of Mathematics, School of Mathematics, University of Minnesota
- Dr. Jane F. Schielack, Associate Dean for Assessment and PK-12 Education, College of Science, Texas A&M University
- Dr. Sandra Stotsky, Professor of Education Reform, Department of Education Reform, University of Arkansas

FREQUENTLY ASKED QUESTIONS

Guiding Assumptions:

- Follow legislative mandates (House Bill 3399)
- Create standards that are clear, concise, objective, measurable, and grade-level appropriate
- Recognize that standards do not require a specific teaching methodology or curriculum
- Gather input from diverse stakeholder groups

Characteristics and Outcomes of New Standards

- Prepare students for success in a college general education mathematics course
- Prepare students for success in a college entry-level English language arts course
- Create assessable standards
- Create standards that demonstrate vertical alignment from one grade level to the next and horizontal alignment to ensure appropriate grade-level placement

Criteria for High-Quality Standards

- Cognitive rigor
- Horizontal and vertical alignment
- Concise
- Appropriate to grade level
- Consideration of depth of knowledge
- Readiness standards (include foundational content and skills)
- Authenticity – provide content with real-life purpose
- User-friendly so that teachers are able to implement standards effectively in the classroom

STEERING COMMITTEE

2. Who are the members of the Oklahoma Academic Standards Steering Committee?

- General Leo J. Baxter, State Board of Education member
- Barbara Bayless, reading specialist at James Griffith Intermediate in Choctaw
- Cathryn Franks, State Board of Education member
- State Superintendent of Public Instruction Joy Hofmeister, Chair
- Elaine Hutchison, mathematics teacher at Fairview Public Schools
- Glen D. Johnson, Chancellor of the Oklahoma State Regents for Higher Education
- Mautra Jones, parent, Oklahoma City Public Schools
- Dr. Cindy Koss, Oklahoma State Department of Education (OSDE) Deputy Superintendent for Academic Affairs and Planning
- Dr. Marcie Mack, State Director of Oklahoma Career and Technology Education
- Don Raleigh, Superintendent of Pryor Public Schools
- Deby Snodgrass, Oklahoma Secretary of Commerce and Tourism

STANDARDS WRITING TEAMS

3. What is the starting point for writing the Oklahoma Academic Standards for Mathematics?

The starting point for writing the standards for mathematics was the PASS 2009 standards. As required by the United States Department of Education, the Oklahoma State Regents for Higher Education certified the PASS standards as college- and career-ready in November 2014. After the steering committee formed the writing team for mathematics, the writing team surveyed stakeholders on the existing PASS standards and used survey data in developing the new standards. In addition, the team reviewed model standards from other states and examined reports of national significance and scholarly research in developing new standards.

4. Whom do the writing teams represent?

The writing teams represent Oklahoma institutions of higher education, classroom teachers, curriculum directors, and instructional coaches. These individuals know and understand current standards related to what students should know and be able to do as well as how to clearly define for teachers high-quality, rigorous standards that are user-friendly. In addition, these individuals possess knowledge of the research-based practices for effective teaching and learning, including trajectories that identify what is grade-level appropriate for students. The insight and knowledge of these educators provides the foundation for developing standards that ensure students are college- and career-ready by their senior year.

5. What is the configuration of the writing teams?

The writing teams are led by co-chairs. One chair represents an institution of higher education, and one represents PK-12 education. The writing team is divided into grade bands: PK-4, 5-8, and 9-12. Grade bands consist of a chair from an institution of higher education and three to four PK-12 educators. In addition, a scribe – one for mathematics and one for English language arts – collates the writing of the teams. Also, each writing team includes an individual from an institution of higher education who provides input related to the assessment of the standards.

OKLAHOMA ACADEMIC STANDARDS FOR MATHEMATICS

6. What are the vision and guiding principles for the Oklahoma Academic Standards for mathematics?

These standards envision that all students in Oklahoma will become mathematically proficient and literate through a strong mathematics program that emphasizes and engages them in problem solving, communicating, reasoning and proof, making connections, and using representations. Developing mathematical proficiency and literacy for Oklahoma students depends in large part on a clear, comprehensive, coherent, and developmentally appropriate set of standards to guide curricular decisions. The understanding and implementation of these

standards throughout the PK-12 mathematics experience is based on the following guiding principles:

1. Guiding Principle 1: Excellence in mathematics education requires equity – high expectations and strong support for all students.

All students, regardless of their personal characteristics, backgrounds, or physical challenges, must have opportunities to study – and support to learn – mathematics. Equity does not mean that every student should receive identical instruction; instead, it demands that reasonable and appropriate accommodations be made as needed to promote access and attainment for all students.

2. Guiding Principle 2: Mathematical ideas should be explored in ways that stimulate curiosity, create enjoyment of mathematics, and develop depth of understanding.

Students need to understand mathematics deeply and use it effectively. To achieve mathematical understanding, students should be actively engaged in doing meaningful mathematics, discussing mathematical ideas, and applying mathematics in interesting, thought-provoking situations. Student understanding is further developed through ongoing reflection about cognitively demanding and worthwhile tasks.

Tasks should challenge students in multiple ways. Short- and long-term investigations that connect procedures and skills with conceptual understanding are integral components of an effective mathematics program. Activities should build upon curiosity and prior knowledge and enable students to solve progressively deeper, broader, and more sophisticated problems. Tasks reflecting significant mathematics should generate active classroom talk, promote the development of conjectures, and lead to an understanding of the necessity of mathematical reasoning.

3. Guiding Principle 3: An effective mathematics program focuses on problem solving and requires teachers who have a deep knowledge of mathematics as a discipline.

Mathematical problem solving is the hallmark of an effective mathematics program. Skill in mathematical problem solving requires practice with a variety of mathematical problems and a firm grasp of mathematical techniques and their underlying principles. Armed with this deeper knowledge, the student can then use mathematics in a flexible way to attack various problems and devise different ways of solving a particular problem. Mathematical problem solving calls for reflective thinking, persistence, learning from the ideas of others, and going back over one's own work with a critical eye. Success in solving mathematical problems helps to create an abiding interest in mathematics.

4. Guiding Principle 4: Technology is essential in teaching and learning mathematics.

Technology enhances the mathematics curriculum in many ways. Technology enables students to communicate ideas within the classroom or search for

needed information. It can be especially helpful in assisting students with special needs in regular and special classrooms, at home, and in the community. Technology changes what mathematics is to be learned and when and how it is learned. Tools such as measuring instruments, manipulatives (such as base-ten blocks and fraction pieces), scientific and graphing calculators, and computers with appropriate software, if properly used, contribute to a rich learning environment for developing and applying mathematical concepts. Appropriate use of calculators is essential; calculators should not be used as a replacement for basic understanding and skills. Although the use of a graphing calculator can help middle and secondary students to visualize properties of functions and their graphs, graphing calculators should be used to enhance their understanding and skills rather than replace them.

STAKEHOLDER INPUT

7. What was available for stakeholder input for the writing of the new Oklahoma Academic Standards?

As required by state law, there were many opportunities for input. The OSDE provided multiple opportunities for stakeholder feedback through town halls, focus groups, surveys, expert reviews, and content consortiums.

“Upon the effective date of this act, the State Board of Education shall begin the process of adopting the English language arts and mathematics standards and shall provide reasonable opportunity, consistent with best practices, for public comment on the revision of the standards, including but not limited to comments from students, parents, educators, organizations representing students with disabilities and English language learners, higher education representatives, career technology education representatives, subject matter experts, community-based organizations, Native American tribal representatives, and business community representatives.” (70 O.S. 11-103.6a.B.2)

STANDARDS REVIEW INFORMATION

8. What are standards?

Academic standards are concise, written descriptions of what students are expected to know and be able to do at a specific stage of their education. Standards describe educational objectives – what students should have learned by the end of a course, grade level, or grade span – but they do not prescribe a particular teaching practice, curriculum, or assessment method.

Academic standards specify what students should know and be able to do, what they might be asked to do to give evidence of standards, and how well they must perform. They include content, performance, and proficiency standards.

Content standards refer to *what* students should know and be able to do.

Performance standards tell *how* students will show that they are meeting a standard.

Proficiency standards indicate *how* well students must perform.

9. Why are academic standards necessary?

Standards serve as rigorous goals for teaching and learning. Setting high standards enables students, parents, educators, and citizens to know what students should have learned at a given point in time. Contemporary society is placing immense academic demands on students. Clear statements about what they must know and be able to do are essential to ensure that our schools offer them the opportunity to acquire the knowledge and skills necessary for success.

10. Why are state-level academic standards important?

State-level academic standards:

- Prepare students for college and careers
- Define credit requirements for graduation
- Guide school districts' adoption and design of curricula

Public education is a state responsibility. The State Superintendent of Public Instruction and Oklahoma Legislature must ensure that all children have equal access to high-quality education programs. At a minimum, this requires clear statements of what all children in the state should know and be able to do as well as evidence that students are meeting these expectations. Furthermore, academic standards form a sound basis on which to establish the content of a statewide assessment system.

11. Why does Oklahoma need its own academic standards?

The citizens of Oklahoma are serious and thoughtful about education and expect high performance from their schools. Standards should reflect the collective values of our citizens and be tailored to prepare young people for economic opportunities that exist in Oklahoma, the nation, and the world.

12. How was the public involved in the development of the standards?

Public input is crucial to the successful implementation of high-quality standards. It was essential that the final academic standards reflect the values of Oklahoma's citizens. Surveys, town halls, focus groups, content consortiums, and input on the discussion drafts of the academic standards were used to obtain citizen input. Drafts of the standards were widely available throughout the state – including on the OSDE website home page. All input received serious consideration.

13. How will local districts use the new academic standards?

Districts may use the standards as guides for developing local grade-by-grade curricula. Implementing standards may require some school districts to upgrade school and district curricula. In some cases, this may result in significant changes in instructional methods and materials, local assessments, and professional development opportunities for teaching and administrative staff.

14. When the new Oklahoma Academic Standards for English Language Arts and Mathematics are approved for implementation, will local districts be required to purchase new textbooks?

No. A variety of instructional materials support the implementation of the new

standards, including textbooks currently in use. Mathematics skills and formulas remain the same, as well as early foundational reading and writing skills. No textbook fully aligns with the standards of every state. The teacher’s knowledge, both of subject-area content and appropriate instructional strategies and materials, is what will ensure student learning. Current textbooks owned by local districts are viable for use with the new standards.

15. What is the difference between academic standards and curriculum?

Standards are statements about what students should know and be able to do, what they might be asked to do to give evidence of learning, and how well they should be expected to know or do it.

Curriculum is the program devised by local school districts to prepare students to meet standards. It consists of research-based activities and lessons at each grade level, instructional materials, and various instructional techniques. In short, standards define what is to be learned at certain points in time and from a broad perspective, what performances will be accepted as evidence that learning has occurred. Curriculum specifies the details of implementation.

16. How are the Oklahoma Academic Standards different from the 2009 Priority Academic Student Skills?

The 2009 Priority Academic Student Skills were a starting point for the development of the new high-quality, rigorous, vertically aligned standards. The final document for the new Oklahoma Academic Standards includes standards by grade level and charts with vertical alignment within grade bands. They also include research that supports the standards.

Throughout the Oklahoma Academic Standards for Mathematics document, the standards are written to allow time for study of additional material at every grade level. The order of the standards at any grade level is not meant to imply a sequence of topics and should be considered flexible for the organization of any course. The document provides standards for PK-7, Pre-Algebra, Algebra I, Geometry, and Algebra II, with Algebra I as the prerequisite for both Geometry and Algebra II.

The Oklahoma Academic Standards for mathematics are developed around both content and process strands. The four main content strands include:

- Number and Operations**
- Algebraic Reasoning and Algebra**
- Geometry and Measurement**
- Data and Probability**

These content strands organize the content standards throughout PK-7 and Pre-Algebra. The standards for Algebra I, Algebra II, and Geometry are fundamentally organized around these strands as well.

17. How are the new standards different from the Common Core state standards?

Oklahoma’s mathematics standards were written by Oklahomans for Oklahomans. Nonetheless, because some standards are based upon universally agreed-

upon basic skills and concepts, some similarities will inevitably exist with other standards in different states and the Common Core state standards. For example, fractions, multiplication and division, and linear equations exist in all standards across the United States. The writing teams for the new Oklahoma Academic Standards are Oklahoma educators knowledgeable not only in content but also in appropriate scaffolding of standards that build a strong foundation for learning from PK-12. The Oklahoma mathematics standards are written to be both rigorous and flexible. They do not prescribe a curriculum but describe what successful students will know how to do by the end of each grade and at the end of their PK-12 educational experience.

18. How will the standards ensure that students are college- and career-ready?

The new standards will identify what a student should know and be able to do to be prepared for college and career. The standards define the progression of learning from PK-12 that builds a foundation and provides progressions necessary for student success and preparation.

“To be considered college- and career-ready, the standards shall be evaluated by the State Department of Education, the State Regents for Higher Education, the State Board of Career and Technology Education, and the Oklahoma Department of Commerce and be determined to be such that the standards will address the goals of reducing the need for remedial coursework at the postsecondary level and increasing successful completion of postsecondary education.” (70 O.S. § 11-103.6a.B.1)

CURRICULUM AND INSTRUCTION

19. What is the research base for the standards?

In addition to the practical experience and content knowledge of the writing team members, the Oklahoma Academic Standards for Mathematics also incorporate intentional use of research for content learning and grade-level appropriateness. In addition, research experts and the Oklahoma standards writing team reviewed and implemented research-based vertical progressions for the new standards.

The Oklahoma Academic Standards for Mathematics writing team drew on the work of the National Council of Teachers of Mathematics (NCTM) standards documents, the National Research Council’s report *Adding It Up*, the Oklahoma Priority Academic Student Skills (PASS), and other states’ standards documents and curriculum framework guides (e.g., Minnesota, Virginia, and Texas).

20. How will teachers know what curriculum to use?

The standards do not prescribe a curriculum. The local school district determines the curriculum and may use a variety of curriculum resources that support what students should know and be able to do.

“School districts shall exclusively determine the instruction, curriculum, reading lists, and instructional materials and textbooks, subject to any applicable provisions or requirements as set forth in law, to be used in meeting the subject matter standards.” (70 O.S. § 11-103.6a.F)

21. What professional development will be provided for teachers to implement the standards effectively?

The Oklahoma State Department of Education will provide educators regional professional development in the areas of English language arts and mathematics. In addition, resources will be available on the OSDE website, including a section called ***PD on Your Plan*** in which Oklahoma teachers share best practices for implementing the Oklahoma Academic Standards.

22. What is the plan for providing teachers implementation guidance?

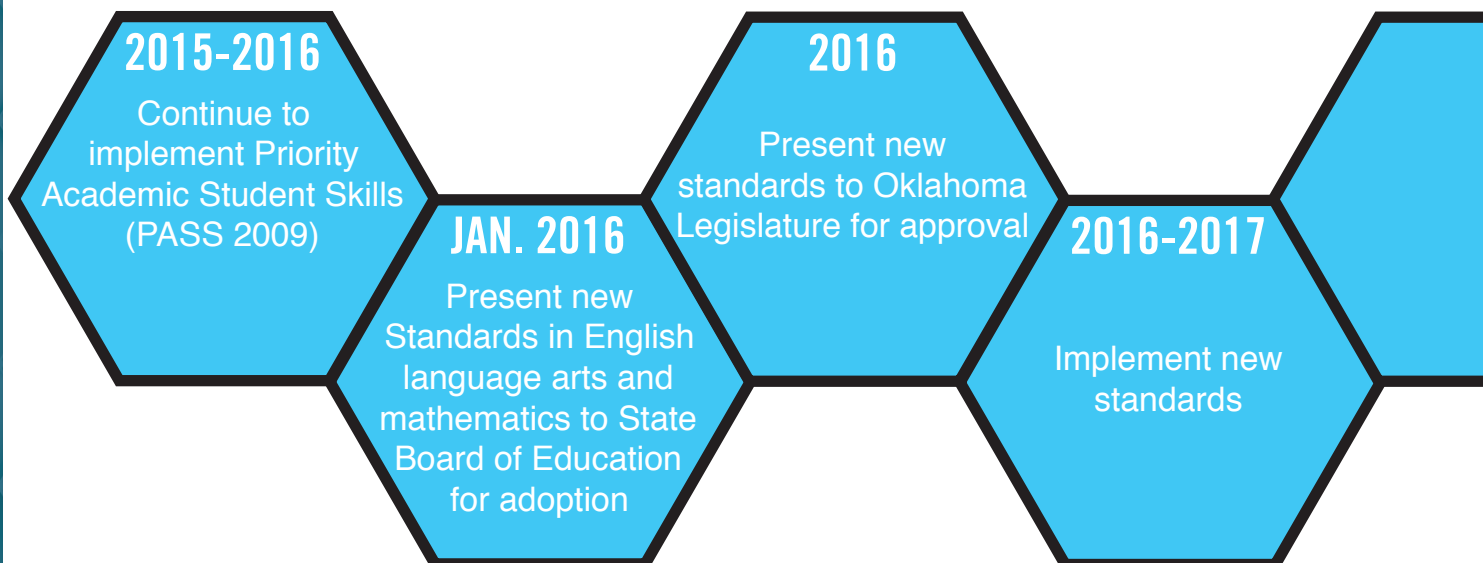
Following approval of the new standards, the implementation plan will begin. Committees of teachers representing districts across the state will meet to create an implementation guide with suggestions for curriculum and instruction referencing research-based practices that meet specific cultural, regional, and special needs of Oklahoma's diverse populations. (Additional information on implementation begins on page 46.)

ASSESSMENT

23. How will the new Oklahoma Academic Standards be assessed?

After the standards are approved, the OSDE will seek input from the Oklahoma Technical Advisory Committee (TAC), Oklahoma State Regents for Higher

Oklahoma Academic Standards



Education, Office of Educational Quality and Accountability (OEQA), Oklahoma State Department of Education representatives, and the Education Coalition for next steps in determining the appropriate assessments for the new Oklahoma Academic Standards that will measure college- and career-readiness.

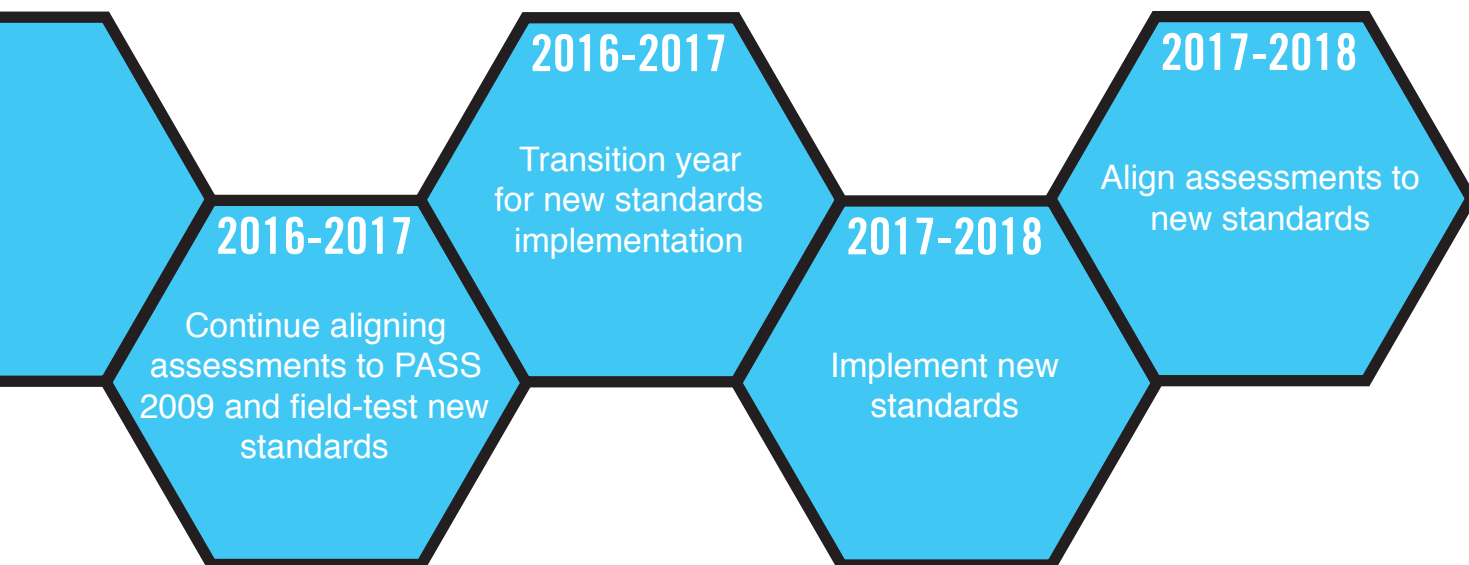
24. How will the standards be aligned to assessments?

Testing blueprints and performance-level descriptors will be developed for standards alignment to assessments.

25. What is the timeline for implementation of the new Oklahoma Academic Standards and aligned assessments?

“On or before the 2017-2018 school year, the State Board of Education, in consultation with the State Regents for Higher Education, the State Board of Career and Technology Education, and the Oklahoma Department of Commerce, shall direct the process of the development of annual high-quality statewide student assessments for English language arts and mathematics as provided for in Section 1210.508 of this title (Title 70) that align with the college- and career-ready subject matter standards developed pursuant to subsection B of this section.” (70 O.S. § 11-103.6a.C)

and Assessments Timeline



OKLAHOMA ACADEMIC STANDARDS

A Cross-Industry Approach to Foundational Skills EMPLOYABILITY SKILLS

Alignment in Oklahoma Academic Standard Mathematics

APPLIED KNOWLEDGE: MATHEMATICS

Use mathematics to solve problems

Add, subtract, multiply, and divide whole numbers, fractions, decimals, and percents

Convert decimals to fractions; convert fractions to percents

Calculate averages, ratios, proportions, and rates

2.N.2.2 Demonstrate fluency with basic addition facts and related subtraction facts up to 20.

4.N.1.1 Demonstrate fluency with multiplication and division facts with factors up to 12.

5.N.3.3 Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals, using efficient and generalizable procedures, including but not limited to standard algorithms in order to solve real-world and mathematical problems including those involving money, measurement, geometry, and data.

6.N.4.3 Multiply and divide fractions and decimals, using efficient and generalizable procedures.

5.N.2 Read, write, represent, and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.

6.N.1.4 Determine equivalencies among fractions, decimals, and percents. Select among these representations to solve problems.

6.D.1.1 Calculate the mean, median, and mode for a set of real-world data.

6.N.3 Understand the concept of ratio and its relationship to fractions and percents and to the multiplication and division of whole numbers. Use ratios to solve real-world and mathematical problems.

7.A.2 Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols, and graphs; solve problems involving proportional relationships and interpret results in the original context.

EMPLOYABILITY SKILLS

A Cross-Industry Approach to Foundational Skills EMPLOYABILITY SKILLS

Alignment in Oklahoma Academic Standard Mathematics

APPLIED KNOWLEDGE: MATHEMATICS

Use mathematics to solve problems

Take measurement of time, temperature, distance, length, width, height, and weight; convert one measurement to another

Translate practical problems into useful mathematical expressions

4.GM.3 Determine elapsed time and convert between units of time.

3.GM.2.6 Use an analog thermometer to determine temperature to the nearest degree in Fahrenheit and Celsius.

4.GM.2.5 Solve problems that deal with measurements of length, when to use liquid volumes, when to use mass, temperatures above zero, and money using addition, subtraction, multiplication, or division as appropriate (customary and metric).

6.GM.3.2 Solve problems in various real-world and mathematical contexts that require the conversion of weights, capacities, geometric measurements, and time within the same measurement systems using appropriate units.

6.A.3.1 Represent real-world or mathematical situations using expressions, equations, and inequalities involving variables and rational numbers.

7.N.2.3 Solve real-world and mathematical problems involving addition, subtraction, multiplication, and division of rational numbers; use efficient and generalizable procedures including but not limited to standard algorithms.

PA.A.4 Represent real-world and mathematical problems using equations and inequalities involving linear expressions. Solve and graph equations and inequalities symbolically and graphically. Interpret solutions in the original context.

A1.F.1.3 Write linear functions, using function notation, to model real-world and mathematical situations.

CRITICAL THINKING:

Use logical thought processes to analyze and draw conclusions

Identify inconsistent or missing information

Critically review, analyze, synthesize, compare, and interpret information

Draw conclusions from relevant and/or missing information

Test possible hypotheses to ensure that the problem is correctly diagnosed and the best solution is found

5.A.2.2 Determine whether an equation or inequality involving a variable is true or false for a given value of the variable.

6.D.1.2 Explain and justify which measure of central tendency (mean, median, or mode) would provide the most descriptive information for a given set of data.

7.A.2.4 Use proportional reasoning to assess the reasonableness of solutions.

7.D.2.3 Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities.

A1.F.1.1 Distinguish between relations and functions.

WORKPLACE SKILLS

PROBLEM SOLVING:

Demonstrate the ability to apply critical-thinking skills to solve problems by generating, evaluating, and implementing solutions

Able to identify and define the problem

Will communicate the problem to appropriate personnel

Capable of generating possible solutions

Ability to choose and implement a solution

Mathematical Actions and Processes:

Develop Strategies for Problem Solving

Students will select from a variety of problem-solving strategies and use corresponding multiple representations (verbal, physical, symbolic, pictorial, graphical, and tabular) when appropriate. They will pursue solutions to various tasks from real-world situations and applications that are often interdisciplinary in nature. They will find methods to verify their answers in context and will always question the reasonableness of solutions.

Mathematical Actions and Processes:

Develop the Ability to Communicate Mathematically

Students will discuss, write, read, interpret, and translate ideas and concepts mathematically. As they progress, students' ability to communicate mathematically will include their increased use of mathematical language and terms and analysis of mathematical definitions.

Mathematical Actions and Processes:

Develop a Deep and Flexible Conceptual Understanding

Students will develop an understanding of how and when to apply and use the mathematics they know to solve problems.

Mathematical Actions and Processes:

Develop the Ability to Make Conjectures, Model & Generalize

Make predictions and conjectures and draw conclusions throughout the problem-solving process based on patterns and the repeated structures in mathematics. Students will create, identify, and extend patterns as a strategy for solving and making sense of problems.

DECISION MAKING:

Apply critical thinking skills to solve problems encountered in the workplace

Identify and prioritize the key issues involved to facilitate the decision-making process

Anticipate the consequences of decisions

Involve people appropriately in decisions that may impact them

Quickly respond with a back-up plan if a decision goes amiss

Mathematical Actions and Processes:

Develop Mathematical Reasoning

Explore and communicate a variety of reasoning strategies to think through problems. Students will apply their logic to critique the thinking and strategies of others to develop and evaluate mathematical arguments, including making arguments and counterarguments and making connections to other contexts.

Mathematical Actions and Processes:

Develop a Productive Mathematical Disposition

Hold the belief that mathematics is sensible, useful, and worthwhile. Students will develop the habit of looking for and making use of patterns and mathematical structures. They will persevere and become resilient, effective problem solvers.

**WORKING WITH TOOLS &
TECHNOLOGY:**

Select, use, and maintain tools and technology to facilitate work activity

Identify, select, and use appropriate tools and technological solutions to frequently encountered problems

Carefully consider which tools or technological solutions are appropriate for a given job and consistently choose the best tool or technological solution for the problem at hand

Operate tools and equipment in accordance with established operating procedures and safety standards

Seek out opportunities to improve knowledge of tools and technologies that may assist in streamlining work and improving productivity

3.N.2.5 Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.

4.N.1.5 Solve multi-step real-world and mathematical problems requiring the use of addition, subtraction, and multiplication of multi-digit whole numbers. Use various strategies, including the relationship between operations, the use of appropriate technology, and the context of the problem to assess the reasonableness of results.

7.D.1.2 Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms. Choose the appropriate data display and know how to create the display using a spreadsheet or other graphing technology.

A1.D.1.1 Describe a data set using data displays, describe and compare data sets using summary statistics, including measures of central tendency, location, and spread. Know how to use calculators, spreadsheets, or other appropriate technology to display data and calculate summary statistics.

A2.A.1.4 Solve polynomial equations with real roots using various methods and tools that may include factoring, polynomial division, synthetic division, graphing calculators, or other appropriate technology.

OKLAHOMA ACADEMIC STANDARDS

AS REQUIRED BY HOUSE BILL 3399, the Oklahoma State Department of Education (OSDE) mathematics team will begin an implementation process for educators beginning in early 2016, immediately following the adoption and subsequent legislative approval of the new Oklahoma Academic Standards. These implementation strategies will support Oklahoma schools with resources, guidance, and learning opportunities to enhance mathematics education for Oklahoma students.

The strategies are based on the essential belief that the most effective approach to the successful implementation of the new standards requires a shared vision by teachers and other stakeholders in mathematics education. The Mathematics Standards Transition Task Force (**see Strategy 1**) will lay the foundation to help ensure representation from across Oklahoma to assure that the resources will indeed meet the needs of classroom teachers.

While resources (**see Strategies 2 and 3**) help to move instructional and assessment practices in the classroom toward a strong mathematics education experience for all Oklahoma students, it is essential to provide a system of support. The Math Summit (**see Strategy 4**) will help create an infrastructure that extends resources and support to Oklahoma teachers. Ongoing and accessible professional learning experiences (**see Strategy 5**) will help teachers engage with concepts found in each grade level of the Oklahoma Academic Standards for Mathematics and the mathematics actions and processes that underpin the mathematics experience that all PK-12 students should have to be college- and career-ready.

Finally, educator leaders and principals will be supported in casting a vision for how they can support all Oklahoma teachers as they pursue excellence in their instruction (**see Strategies 6 and 7**).

Mathematics Strategies & Budget

Strategy 1: Mathematics Standards Transition Task Force	\$10,000
Strategy 2: Oklahoma Math Framework Project	\$110,000
Strategy 3: Math Task Force	\$10,000
Strategy 4: Math Summit and Regional Meetings	\$20,000
Strategy 5: <i>PD on Your Plan</i> Development	\$25,000
Strategy 6: Teacher Leader/Instructional Coach Network	\$10,000
Strategy 7: Principal Leadership for Mathematics	\$15,000
TOTAL	\$200,000

IMPLEMENTATION

Strategy 1: Mathematics Standards Transition Task Force

In spring 2016, a task force of representatives from PK-12 education, higher education, career technology, and business and community will meet to begin to develop recommendations for supporting districts and teachers as they transition to the new standards. Strategy 1 will focus on this effort with the Mathematics Standards Transition Task Force through two on-site meetings in 2016. Goals will include reviewing transition strategies that are being implemented and determining additional strategies as needed.

Budget: \$10,000

Budget Explanation: Travel and substitute reimbursement for PK-12 educators only

Timeline: Spring and fall 2016

Strategy 2: Oklahoma Math Framework Project

To better support teachers in understanding each of the Oklahoma Academic Standards for Mathematics, Strategy 2 focuses on the Phase 1 development of a framework resource to provide mathematics teachers guidance on each of the standards.

Budget: \$110,000

Budget Explanation: Stipend for Phase 1 project manager (\$10,000); contract for professional development provider (\$10,000); stipend for elementary and secondary team leads (\$5,000 each); lodging (\$2,000 per teacher, 39 teachers total representing K-8 and courses in high school = \$78,000); materials (\$2,000)

Timeline: February to August 2016

Strategy 3: Math Task Force

To better support teachers, Strategy 3 focuses on the creation of a math task force that will work within eight different regions throughout the state to empower classroom teachers to share the effective mathematical tasks they have implemented and others that help to illustrate the new standards. Within each region, teachers will identify resources to help their fellow educators implement the new Oklahoma Academic Standards for Mathematics. During summer 2016, selected teachers from each region will attend a statewide meeting to compile all of the resources into one document per grade level that can be utilized during implementation of the new Oklahoma Academic Standards during the 2016-2017 school year. This comprehensive strategy would be the first of its kind for Oklahoma and could serve as a model for curriculum support structures for other disciplines.

Budget: \$10,000

Budget Explanation: Venues and expenses incurred for 8 regional meetings across the state (\$8,000) and lodging and/or travel for participants for on-site meetings.

Timeline: Spring to summer 2016

Strategy 4: Math Summit and Regional Meetings

With new Oklahoma Academic Standards for Mathematics on the cusp of approval and implementation, this is a pivotal time of change for math education in Oklahoma. Math educators across the state need to be empowered with instructional strategies, formative assessment, and a unified vision for a high-quality math education for Oklahoma students. Strategy 4 creates a Math Summit during the early months of the 2016-2017 school year to bring together math leaders and educators from across the state for two days of vertical and horizontal collaboration.

Budget: \$20,000

Budget Explanation: Venue (\$5,000); summit keynote speaker (\$5,000); teacher scholarships for summit (\$100 per night per teacher for 80 teachers = \$8,000); materials (\$2,000)

Timeline: August to September 2016

Strategy 5: PD on Your Plan Module Development

Individual teachers can access these developed modules during plan periods, while groups of teachers can utilize them during a professional learning team or department meeting. In an effort to produce high-quality PD on Your Plan modules around the new Oklahoma Academic Standards for Mathematics, Strategy 5 proposes to work with university professors, curriculum coordinators, mathematics department chairs, and K-12 teachers in Oklahoma to develop modules that support teachers in implementing the new math standards. Included in Strategy 4 is an effort to partner with two other states, Minnesota and North Carolina, to develop additional PD on Your Plan modules for mathematics. Although each of the states will have unique standards, the partnership will allow the states to produce modules beneficial to all three states.

Budget: \$25,000

Budget Explanation: Food (\$3,000); travel reimbursement (\$8,000); substitute teacher reimbursement (\$4,000); travel and lodging for state coordinators from Minnesota and North Carolina (\$10,000)

Timeline: Beginning January 2016

Strategy 6: Teacher Leader/Instructional Coaching Network

To unite instructional coaches across the state, Strategy 6 will engage instructional coaches through a summer event. This two-day meeting will allow for collaboration of resources, professional development ideas, and documents used by the instructional coaches while also providing professional development in areas such as coaching framework and process, instructional strategies, and content knowledge. This group would be the first consortium of its type in Oklahoma and could lay the foundation for work in the 2016-2017 school year.

Budget: \$10,000

Budget Explanation: Travel and/or lodging for on-site meeting with participants

Timeline: June/July 2016

Strategy 7: Principal Leadership for Mathematics

It is essential to consider the role of the school principal as an instructional leader for mathematics. In Oklahoma, approximately 95 percent of districts do not have a dedicated mathematics curriculum director or instructional coaching in mathematics. The OSDE can develop a program to lead the conversation around how school leaders can actively support the improvement of mathematics instruction in their schools. By supporting principals in understanding the Eight Mathematics Teaching Practices (NCTM, 2014) and their alignment to the teacher leader indicators, we can ensure that Oklahoma principals can envision a strong mathematics program in their schools and have the tools they need to help their teachers envision, believe, understand, practice, receive feedback, and work collaboratively to ensure mathematical success for all.

Budget: \$15,000

Budget Explanation: Teacher evaluation system alignment (\$2,500); session planning with North Carolina (\$2,500); presenter and facilities (\$10,000)

Timeline: Spring 2016

OKLAHOMA ACADEMIC STANDARDS



January 26, 2016

Oklahoma State Board of Education
Oliver Hodge Education Building, Room 1-20
2500 North Lincoln Boulevard
Oklahoma City, OK 73105

Dear State Board of Education Members,

On behalf of John Rex Charter Elementary School, I would like to offer support for the new Oklahoma Academic Standards for English language arts and mathematics that have been drafted by a committee of highly respected Oklahoma educators.

Upon review, I observed that the standards have been fashioned to allow ample breadth and depth of knowledge in both content areas. Providing a rigorous set of academic standards will ensure that all Oklahoma children are college- and/or career-ready.

The standards and accompanying documents will serve as a beneficial guide for our teachers. I am particularly pleased with the documents' vertical progressions, user-friendly format, and ease of navigation. Furthermore, I was impressed with the evidence of developmentally appropriate expectations embedded in the standards at all grade levels.

Thank you for the opportunity to provide this feedback. Our teachers will be enthusiastic to implement the new Oklahoma Academic Standards. Please extend my thanks and appreciation to all of the educators who thoughtfully labored to create the new standards! Thank you for your service to Oklahoma's children and families.

Sincerely,

Joseph M. Pierce, Ed.D.
Head of School & Superintendent

500 W. Sheridan Ave. Oklahoma City, OK 73102
(405) 587-8100 | www.johnrexschool.org

LETTERS OF SUPPORT



1/21/2016

Janet C. Dunlop, Ph. D.
Broken Arrow Public Schools
701 S Main Street
Broken Arrow, OK 74012

Oklahoma State Board of Education
Oliver Hodge Building, Oklahoma State Capitol

Dear Oklahoma State Board of Education,

It is with full confidence that Broken Arrow Public Schools endorses the new Oklahoma State Standards in English Language Arts and Mathematics. Our confidence stems from the process through which the Oklahoma State Department of Education engaged multiple groups to participate in the writing, editing and advising, and final draft of these standards. The alignment of the standards to college and career ready skills, and the precise vertical alignment provide a much better roadmap for our teachers to use. We feel strongly that these standards will provide our students with a more rigorous and deep understanding of the concepts and skills needed to be equipped citizens and successful in college and career. We ask that you approve these standards as our new standards for schools.

Best regards,

Janet C. Dunlop, Ph. D.
Associate Superintendent
Broken Arrow Public Schools

Oklahoma City Public Schools

January 19, 2016

Dr. Cindy Koss
Deputy State Superintendent of Academic Affairs
Oklahoma State Department of Education
2500 North Lincoln Blvd.
Oklahoma City, Oklahoma City Public Schools

RE: Letter of Support

Dear Dr. Koss,

It is with excitement and gratitude that the Oklahoma City Public Schools extends our letter of support for the heroic work your team, our state writing team and the thousands of educators and business men and women who have contributed to the development of the new Oklahoma State Academic Standards for English Language Arts and Mathematics. We thank you for remaining committed to the creation of Academic Standards written by and for Oklahomans.

The research behind these new standards provides a strong foundation that will assure that the children of Oklahoma will be prepared for college, careers and the world beyond. The level of rigor and the expectation that ALL students can perform at higher levels is evident in these new standards. The thoughtful structure of each content area reflects the uniqueness of what students need to know/be able to do within those academic strands. And there is a clear scaffolding of standards from one grade level to another, building foundational learning from Prekindergarten through twelfth grade.

We support the completed standards and highly encourage all involved in the decision making of standards approval to do the same with confidence. These are standards that will truly raise the bar for every student, moving Oklahoma into a new realm of possibilities for public education.

Please thank your team and the writers for their dedication and willingness to listen to voices across the state while standing firm on research around high-impact teaching and learning. We look forward to a unanimous vote by state decision-makers so that school districts in Oklahoma may begin preparations for a strong start to the 2016-17 school year.

Sincerely,

Lynn D. Barnes
Senior Executive Director PK-12 Academics



Kent Shellenberger Ed.D
Superintendent
(405) 789-3801
kshel@bps.k12.ok.us



Rocky George
Business Manager
(405) 499-4602
rgeorge@bps.k12.ok.us



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DeLana Massey
Treasurer
(405) 499-4605
dmassey@bps.k12.ok.us

Administration
Fax (405) 499-4606

January 26, 2016

Dear Members of the State Board of Education,

This letter is in support of the newly created and Governor mandated Oklahoma Academic Standards for the English Language Arts and Mathematics academic content areas. House Bill 3399 directed the State Department of Education to develop Standards "by Oklahomans for Oklahomans." The resulting Standards demonstrate academic rigor and a clear pathway to student learning competencies needed for 21st Century college and career ready students.

The Standards align with appropriate hierarchical developmental and student learner critical thinking skills. Each of the content areas clearly describe an overview of both scope and sequence of student achievement expectations. The Standards provide an excellent template of very specific and clear student learner outcomes.

As the superintendent of Bethany Public Schools and acting member on the Commission for Educational Quality and Accountability, I give my full support for the final version of English Language Arts and Mathematics Standards.

Sincerely,

Kent Shellenberger, Ed.D.
Superintendent of Schools





EDMOND MEMORIAL HIGH SCHOOL

1000 East 15th Street, Edmond, Oklahoma 73013

Administration (405) 340-2850

Guidance Office (405) 340-2938

Freshman Academy (405) 340-2851

Fax (405) 330-7355

Fax (405) 330-7318

Fax (405) 340-2862

January 22, 2016

Superintendent Joy Hofmeister
State Superintendent of Education
Oklahoma State Department of Education
Oliver Hodge Building
2500 North Lincoln Boulevard
Oklahoma City, OK 73105

Re: Oklahoma Math Standards

Dear Superintendent Hofmeister:

We are writing this letter in support of the Oklahoma Math Standards that have just been written by a committee of Oklahoma mathematics educators. Having had the opportunity to give input during the writing process, the entire Memorial High School mathematics department believes these are clear and concise standards that will help all Oklahoma students become college and career ready.

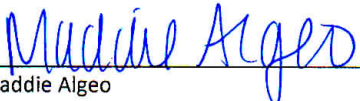
With the mathematical actions and processes embedded in each strand, we feel the new standards have more rigor than our current standards. This is vital in order to insure our students learn to become mathematical thinkers and communicators. They must be able to take the skills they have learned and apply them in different circumstances. As math educators, we also know the information must flow smoothly from one grade to another. The attention to connections among the grade levels and visible vertical alignment are much needed additions.

Once again, we are in full support of the Oklahoma Math Standards and the math standards writing committee. We feel these standards are a step in the right direction in order to make certain our students are college and career ready.

Sincerely,

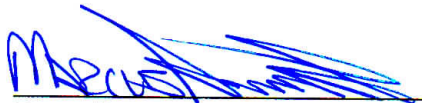
The Mathematics Department
Edmond Memorial High School
1000 E. 15th Street
Edmond, OK 73013


Melony Coen, Mathematics Chair


Maddie Algeo



Home of the Bulldogs



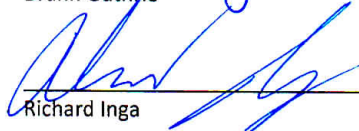
Marcus Altstatt



Lisa Brown



Evann Guthrie



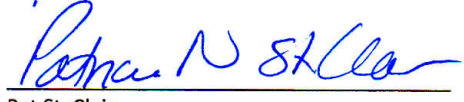
Richard Inga




Katie Klossner




Michelle Madison



Pat St. Clair



Sarah Teal



Jennifer White



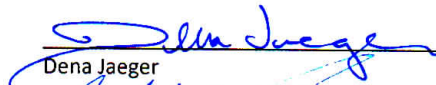
Steve Bowware




Stacy Golden



Halle Herbert



Dena Jaeger



Jeff Lovett



Ryan McCaul



Kristina Stevenson

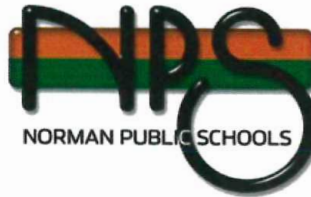


Amanda Welch



Lorna Williams

**Dr. Joseph Siano
Superintendent**



**Administrative Services Center
131 S. Flood Avenue
Norman, OK 73069-5463**

January 25, 2016

Joy Hofmeister, State Superintendent
Oklahoma State Department of Education
2500 N. Lincoln Boulevard
Oklahoma City, OK 73105-4599

Dear Superintendent Hofmeister,

I am pleased to write a letter of support for the Oklahoma English language arts standards and math standards, written by Oklahoma teachers and developed for Oklahoma students. I believe these rigorous standards provide a roadmap for teachers to move students towards college readiness and other post-secondary options. I congratulate the committee for their work.

In reviewing the English language arts standards I am most impressed with the eight overarching standards for college and career readiness. Appearing at every grade level, the eight standards provide a unity and focus among all grade levels and create a natural alignment across grade levels. While the grade level specific standards skill progressions are rigorous, they are also appropriately scaffolded.

Another strength of the English language arts standards is the focus on reading and writing for every standard at every grade level. This approach provides for the overall literacy of our students so they are able to read and negotiate any text they are given and also respond in writing. The more specific grade level focus is a strength of these standards.

The math standards are also very well-written. They are rigorous, preparing students to problem solve, communicate, and reason about math. This will ensure that Oklahoma students are ready for the math they will have in college and to have the skills that are necessary in the workplace. The inclusion of the mathematical actions and processes create a solid foundation for students to have a positive attitude towards math and to understand math's relevancy to the real world.

It is important for the students of Oklahoma for our leaders to move forward and adopt these standards so our teachers can begin the work of implementation: revising curriculum, selecting materials, creating units and lessons, and developing appropriate assessment.

Sincerely,

A handwritten signature in black ink that reads 'Dr. Joseph Siano'. The signature is written in a cursive style.

Dr. Joseph Siano
Superintendent

JS/la

Office (405) 366-5955 • Fax (405) 366-5851 • www.norman.k12.ok.us

Stilwell Public Schools

Geri Gilstrap, Superintendent
1801 W. Locust
Stilwell, OK 74960
Phone (918) 696-7001
FAX (918) 696-2193



Board of Education

CHAD SMITH, President
GORDON CHRONISTER, Vice Pres.
DELORES MARTIN, Clerk
JESS MERRIOTT, Member
ROBERT W. MUSKRAT, Member
BEVERLY STARR, Treasurer

Office of the Superintendent

To Whom It May Concern:

I am writing this letter in support of the newly developed Oklahoma State Standards. These standards have been a collaborative endeavor for Oklahoma teachers, administrators and stakeholders alike. It is with great focus and diligence these standards have been developed over the past months. Every bit of input and commentary has been considered in the development of these standards and that has been a very appreciated and refreshing approach.

I personally have had veteran teachers within my district who have worked on subject area committees and even more who have commented on the standards as they were being developed. They have expressed to me that they are so proud to have their voices heard and their expertise in their field acknowledged and utilized! They take ownership of these newly developed standards knowing that they have had a hand in molding them.

These standards are truly what they are titled "Oklahoma State Standards," written, reviewed and revised by Oklahoma education professionals. They have been created to illustrate robust and rigorous standards that reflect what students in Oklahoma need to attain in order to succeed in post secondary education. I am confident in the work of so many in the field of education who have come together to create these new standards that are tailored to the needs of our Oklahoma students. I applaud the hard work that has gone into the development of these standards. This work will benefit the children of Oklahoma for years to come.

Respectfully,

Geri D. Gilstrap



The El Reno Public Schools

Offices of the Board of Education • P.O. Box 580 • El Reno, Oklahoma 73036 (405) 262-1703

January 21, 2016

Oklahoma State Board of Education
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105

Dear Superintendent Hofmeister and Members of the Oklahoma State School Board ,

On behalf of El Reno Public Schools, we am writing to you to give our support for the newly created Oklahoma Academic Standards for Mathematics. Our district finds the standards represent a sustainable approach for increasing mathematical proficiency, improving student achievement, and advancing the preparation of academic and career opportunities.

The strength of the standards is identified through the purposeful alignment within and across grade levels. Students will gain greater mathematical aptitude due to the increased emphasis placed on both content and process, which will improve the development and retention of skills. The standards also provide the best opportunity in successfully preparing Oklahoma students in achieving the requirements for college and career readiness. The alignment to NAEP and ACT ensures a more rigorous structure within the standards, which will help students reach basic proficiency levels with higher achievement rates. The increased attainment results will further promote Oklahoma as a highly competitive and academically comprehensive state on a national level. It is important to note that while the standards have been improved to address the skills identified by national comparison assessments, it is evident that careful consideration has been given to ensure the requirements are grade level appropriate. The vertical alignment, purposeful progressions, and depth of objectives per standard are what set the new Oklahoma Academic Standards for Math apart from Common Core State Standards. A deeper focus on fewer standards, along with grade-level specific targets to affirm achievement gains, are what makes these standards the best for Oklahoma students.

We are confident that the new Oklahoma Academic Standards for Mathematics will significantly improve student achievement and productively provide a strong foundation as students continue their educational and career endeavors.

Sincerely,

Craig McVay
Superintendent, El Reno Public Schools

Julie Owens
Mathematics Curriculum Director, El Reno Public Schools



COOPERATIVE
COUNCIL FOR
OKLAHOMA
SCHOOL
ADMINISTRATION

2901 North Lincoln Boulevard
Oklahoma City, OK 73105
405-524-1191 office
405-524-1196 fax

January 26, 2016

State Board of Education
Oliver Hodge Building
2500 North Lincoln Boulevard,
Oklahoma City, Oklahoma 73105

Dear Honorable Members of the Oklahoma State Board of Education,

On behalf of the members of the Cooperative Council for Oklahoma School Administration (CCOSA), we are writing this letter to offer our support for the proposed Oklahoma Academic Standards for Mathematics and English / Language Arts. As the only statewide organization representing public, private, and charter school leaders, we are keenly aware of the importance of having standards in place as quickly as possible. Hearing from our members about their involvement in the review and development of the proposed standards gives us tremendous confidence in the process utilized by the State Department of Education to create these new standards.

Oklahomans from all walks of life were afforded a meaningful opportunity to review and create the proposed academic standards. The process used to create these standards was deliberately inclusive of all interested voices, leaving out only those that chose not to participate in the many steps of review, development, and refinement. The proposed standards are designed to prepare students for successful entry into the workforce, career technology institutes, or higher education. Importantly, the educators involved in this process have determined that the proposed standards will benefit the students of Oklahoma.

We appreciate the commitment to continuous improvement from Superintendent Hofmeister, the staff of the State Department of Education, and the members of the State Board of Education. As it relates to state academic standards, we know that there is never a final product. Standards are frequently reviewed and modified with an eye toward improving student achievement. Sustained fidelity to a comprehensive process of standards review and refinement will ensure that all Oklahoma students receive the high quality educational experience to which they are entitled.

CCOSA supports the approval of the Oklahoma Academic Standards as proposed by the State Superintendent and the many other Oklahomans involved in this process. It is imperative that the standards are quickly acted upon so that school leaders and teachers can begin the important work of training and implementing these new standards by August of 2016.

Please feel free to share this letter with any other interested entities during the approval process.

Respectfully,

Steven Crawford
Co-Executive Director
CCOSA

Ryan Owens
Co-Executive Director
CCOSA

www.ccosa.org

 @CCOSA

Mustang Public Schools

Office of Assistant Superintendent



January 22, 2016

Superintendent Joy Hofmeister
State Superintendent of Education
Oklahoma State Department of Education
Oliver Hodge Building
2500 North Lincoln Boulevard,
Oklahoma City, Oklahoma 73105

Dear Superintendent Joy Hofmeister,

Mustang Public Schools is writing this letter to show our support for the Oklahoma Academic Standards for Math and ELA. As a school district, we have conducted several standard reviews that included teachers, administrators and specialists. We have also sent teachers and administrators to participate in standard reviews with other groups across the state. From these numerous opportunities, it has been determined that these standards are a quality product and will benefit the students of Oklahoma. The outstanding qualities of these standards are endless and can become very detailed. Here are a few exceptional points we have identified:

- Methodical, inclusive approach to writing the standards
- Standards are placed at developmentally appropriate levels
- Research was a driving factor for the standards
- Oklahoma teachers were involved in the standards' writing process so the standards are truly Oklahoma standards
- Input was collected and addressed three different times from school experts across the state
- The documents are comprehensive including glossary, examples and research
- Comprehensive nature of the standards makes them user friendly from the new teacher to the master teacher
- Standards provide an explicit systematic alignment through a complete vertical progression
- Mathematical actions and processes are integrated
- Reading and writing processes are parallel and taught together

It is with much thought and review that Mustang Public Schools endorses these standards in the manner they are presented. It is imperative that the standards are not adjusted or changed through the approval process.

Furthermore, please feel free to share this information on with the State Board of Education, the Oklahoma State Regents for Higher Education, and/or any other interested entities during the approval process.

Dr. Angela Mills
Assistant Superintendent, Mustang Public Schools



OKLAHOMA PUBLIC SCHOOL RESOURCE CENTER

January 19, 2016

Oklahoma State Board of Education
Oliver Hodge Education Building, Room 1-20
2500 North Lincoln Boulevard
Oklahoma City, OK 73105

Dear State Board of Education Members,

The Oklahoma Public School Resource Center (OPSRC) would like to offer support for the new standards that have been drafted by a committee of Oklahoma educators. We believe that the standards represent an upgrade over the current Oklahoma math and reading standards and will help ensure that students in our state are college and career ready.

The OPSRC represents over 110 public school districts and charter schools across the State of Oklahoma. A number of member schools as well as OPSRC staff have participated in the process of drafting and reviewing the standards and agree that the standards represent a significant improvement over the existing standards for math and reading. We recognize that standards serve as an important target for educators and by raising the bar, the new standards should help ensure that students exit school with the skills necessary to succeed in today's economy.

We welcome the opportunity to provide this support and recommend that you approve these standards. Thank you for your service to Oklahoma's children and families.

Sincerely,

Brent Bushey
Executive Director

309 NW 13th Street, Suite 103, Oklahoma City OK 73103
(405) 212-4802 | www.opsrc.net



PO Box 1149, Glenpool, OK 74033
918-322-9500

January 21, 2016

Superintendent Joy Hofmeister
State Superintendent of Education
Oklahoma State Department of Education
Oliver Hodge Building
2500 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105

Dear Superintendent Joy Hofmeister,

I had the opportunity to review the newly authored Oklahoma Language Arts Standards and Oklahoma Math Standards that were developed by committees of Oklahoma educators. Thank you for providing a time for members of the Teaching and Learning Advisory Committee to read and evaluate the standards.

I was very pleased with the Oklahoma Language Arts Standards. The vertical alignment of these standards is extremely helpful to Oklahoma educators and will allow teachers to clearly see their areas of focus for each grade level. The flow of standards between each grade level shows a progression of student development that is invaluable to each grade level. The removal of redundant skill sets in each grade level allows the teacher to focus on the newly introduced skills and increased rigor of grade level standards. The written document demonstrates the natural way that students should learn reading and writing by bundling cohesive skills together in an integrated learning process. This will help teachers take a more real world approach to student learning which will dramatically increase their career and college readiness.

The Oklahoma Math Standards were written in everyday language that will be clearly understood by teachers. The vertical alignment of the math standards is even more important as it becomes crucial that students in each grade level learn and demonstrate proficiency in grade level standards to be ready to add the next brick of learning. These standards provide a fantastic road map of student's mathematical development throughout their academic career and place emphasis on each stage of learning. The focus on math integration with real world application promotes critical thinking and problem solving.

Glenpool Public School District supports the new Oklahoma Language Arts Standards and Oklahoma Math Standards and is very appreciative of the outstanding work that was done as well as the ability of the Oklahoma State Department of Education to make this a high priority to have these standards in place for the 16-17 school term.

Sincerely,

June L Gerred
Director, Instructional Technology
Glenpool Public Schools



DEER CREEK SCHOOL DISTRICT

Dr. Diana Jones
Executive Director of Teaching & Learning
dianajones@dcsok.org

January 25, 2016

Oklahoma State Board of Education
2500 N. Lincoln Boulevard
Oklahoma City, OK 73105

Honorable Members of the Oklahoma State Board of Education:

Please accept this correspondence as notification of support by Deer Creek School District of the Oklahoma Academic Standards for English Language Arts and Mathematics. It is our hope that the standards will be approved as submitted.

Including all educators in the process development reinforces the credibility of the final draft. This professional process provided educators a variety of options for participation and should be commended. Some examples of participation include, the opportunity to be on the draft committee, opportunities for input and suggestions by all educators, not just those on the committee, and the continual communication regarding the timeline and revisions, as well as community and corporate input. It is important to note that our district had representation and input throughout the entire process: Deer Creek School District had a representative on the English Language Arts Committee and OSDE English Language Arts and Math representatives came to our district to present and gain input from our teachers about the standards. As a district, we communicated with and encouraged all of our staff members to provide feedback and input throughout the entire process and were pleased to see our suggestions as a part of the revisions throughout the draft stages.

The final drafts of the Oklahoma Academic Standards for English Language Arts and Math provide research-based, rigorous standards that are vertically aligned and viable to achieve. These standards will allow Oklahoma Educators to ensure that our students have the opportunity to be successful in their own personal learning progression of standards that are vertically aligned and systematically rigorous. The comprehensive development of the standards and examples leave no question(s) regarding the meaning or the intent of the standard. We feel confident that the students of Oklahoma will be prepared for their future no matter what school or district(s) they attend.

Thank you for your time and attention.

Respectfully,

Dr. Diana Jones
Executive Director of Teaching and Learning
Deer Creek School District I-006

Home of the Antlers
20701 N. MacArthur Boulevard – Edmond, Oklahoma 73012
405.348.6100 (o) – 405.348.3049 (f)



January 18, 2016

Superintendent Joy Hofmeister
State Superintendent of Education
Oklahoma State Department of Education
Oliver Hodge Building
3500 North Lincoln Blvd
Oklahoma City, Oklahoma 73105

Dear Superintendent Hofmeister,

The Oklahoma Math Alliance is a newly formed organization that is comprised of members from sixteen *math organizations throughout the state*. Our mission is to serve as an entity to which government, industry, other disciplines, and private foundations can turn for leadership and participation by the mathematical sciences and, afford advice and counsel.

It is the privilege of Oklahoma Math Alliance to write a letter of support of the Oklahoma Math Standards that are being developed by a committee of Oklahoma mathematics educators. The OMA believes these standards are a favorable advance in mathematics, and will ensure that Oklahoma's children are college and career ready.

Upon diligent review of the standards, and the process in which they were developed, we find that the proposed standards are rigorous for all students. Furthermore, we applaud the transparent process in which these standards have been developed. Mathematicians and math educators at all levels have been involved in each step of development. By allowing opportunities to comment, with revisions reflecting feedback, we are assured that the proposed standards are a true reflection of mathematical excellence that is valued by the educators of Oklahoma. We believe this involvement will ensure a fluid and successful implementation of the standards once they are adopted. Snyder et al (Snyder, Bolin, & Zumwalt, 1992), submitted that researchers support the notion that program development in schools would be more effective if educators were involved. In addition, we contend that the new standards are clear, concise, developmentally appropriate, and vertically aligned. It is evident that much time and effort has been dedicated to ensure that these standards have been aligned by grade level with purposeful progression. Furthermore, it is our belief that these standards are rigorous and sustainable. Much emphasis has been placed on developmentally appropriate standards and learning trajectories at each level of progression. This ensures that educators will be empowered to provide more meaningful experiences, and spend more time developing deep contextual understanding of content.

Sincerely,

Oklahoma Mathematics Alliance comprised of members from:

Oklahoma Council of Teachers of Mathematics, National Council of Supervisors of Mathematics, OKMath Leadership Alumni, Oklahoma Career Tech Teachers Association, Future Oklahoma Mathematics Educators, Teacher Leaders and Instructional Coaches Network, Oklahoma State Department of Education, American Statistical Association, American Mathematical Society, Mathematical Association of America, Association of Mathematics Teacher Educators, Western Oklahoma Mathematics Consortium, Southeastern Oklahoma Mathematics Consortium, Northeastern Oklahoma Mathematics Consortium, Central Oklahoma Mathematics Consortium, Tulsa Regional STEM Alliance



The UNIVERSITY of OKLAHOMA.

OKLAHOMA WRITING PROJECT
Priscilla L. Griffith, Ph.D., Director
Audra Plummer, M.Ed.,
Co-Director for In-Service

January 21, 2016

Oklahoma State Board of Education
2500 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105

Honorable Members of the Oklahoma State Board of Education:

The Oklahoma Writing Project is pleased to support the adoption of the Oklahoma Academic Standards for English Language Arts. The content of the standards is rigorous and requires students to engage in analysis, synthesis, evaluation, and creativity beginning as early as pre-kindergarten. OWP is confident application of these standards will ensure students are prepared for workplace and college success. In addition, the document is clearly written and user-friendly for all stakeholders.

Teachers across grade levels, representing the OWP professional community, reviewed an earlier draft of the standards and provided suggestions to strengthen the document. Our suggestions are reflected in the final version.

The Oklahoma Writing Project, a site of the National Writing Project, has been part of the University of Oklahoma since 1978. OWP serves teachers of writing at all grade levels, pre-K through university, and in all subjects. The mission of the OWP is to develop teacher leaders and to improve student achievement in writing and literacy in Oklahoma's schools, technology centers, and colleges. We believe every student deserves a good teacher of writing. Over the last five years the OWP has provided over 195,000 program service contact hours and reached over 8,000 teachers through our activities that include a summer institute for teachers, professional development to schools, and youth, family, and community activities.

Thank you for the opportunity to review the standards document. We appreciate the process of involving the community in the development of the standards through a wide reaching review process.

Sincerely,

Priscilla L. Griffith

Priscilla L. Griffith, Ph. D.
Professor
Ruth G. Hardman Chair in Education
Director of the Oklahoma Writing Project

Audra Plummer

Audra Plummer, M. Ed.
Co-Director for In-Service
Oklahoma Writing Project

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To Whom It May Concern:

I write this letter to lend my support to the Oklahoma Academic Standards for Mathematics.

I commend the group of individuals who put together this document as it is impressive amount of work they accomplished in a short period of time.

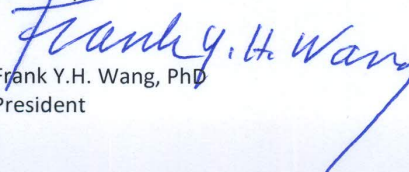
My background is as follows: I am a mathematician by training with a bachelor's degree in math from Princeton University (1986) and a PhD in pure math from MIT (1991). While pursuing my PhD I taught students at MIT and at the University of California at San Diego. I am also co-author of a calculus textbook published by Saxon Publishers in 1988. In 1991, I began work full-time at Saxon Publishers and became its president in 1994. I left Saxon Publishers at the beginning of 2003 to pursue my lifelong passion and desire to be a classroom teacher. I came to the Oklahoma School of Science and Math and taught math during the years of 2003-2005 for free. I also taught math (Calculus II, III, and IV) at the University of Oklahoma in 2003 and 2004. Over my career, I estimate I have spoken to/conducted workshops for between 20,000 and 30,000 teachers all over the United States.

My work as a textbook publisher made me familiar with a various state standards. Generally, I am not a fan of these standards as I have found many of the individual standards to be too vague and "touchy-feeley" (Sorry about the use of a colloquial term here; I could not think of a better word). Moreover, I find that there often no clear and measurable way to assess whether a student has successfully met a particular stated standard.

I was pleasantly surprised to read the Oklahoma Standards and find they are direct and explicit in their expectations. For example, Standard A2.N.1.1 states "Find the value of i^n for any whole number n ." This standard expresses clearly what is expected of the student. (Too often I have read standards in the past from other states that have read "The student will develop critical thinking skills." What does this mean? How can this be measured? Some states will require that the student develop problem solving skills. My belief is that one develops problem solving skills not by reading about problem solving but by solving a lot of problems. Those people who are good problem solvers, I believe, are also those who have spent hours solving many problems.)

Given my prior experience studying state standards, I approached this task of examining the Oklahoma Standards with a healthy amount of skepticism. I was pleasantly surprised. Overall, I found the standards to be clearly stated, explicit, relevant and appropriate. I feel that students who are in classes that follow these standards will be well-prepared for college and be capable of pursuing STEM majors, if they chose to do so.

Sincerely,


Frank Y.H. Wang, PhD
President

Founded 1990 for the People of Oklahoma



A member institution of the Oklahoma Health Center



OKLAHOMA STATE DEPARTMENT OF
EDUCATION
— CHAMPION EXCELLENCE —