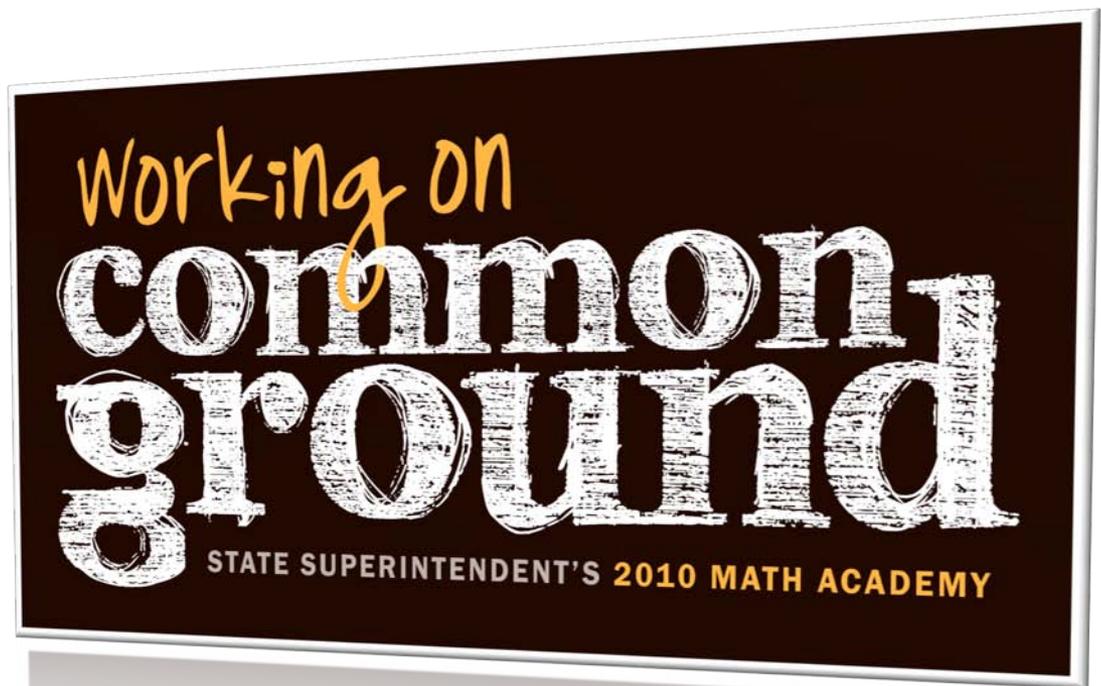




Common Core State Standards (CCSS) & Oklahoma's *Priority Academic Student Skills (PASS)*: Mathematics

Kerri White, Executive Director High School Reform
Oklahoma State Department of Education
Courtney Lockridge, Oklahoma Technical Assistance Liaison
Mid-Continent Comprehensive Center (MC3)



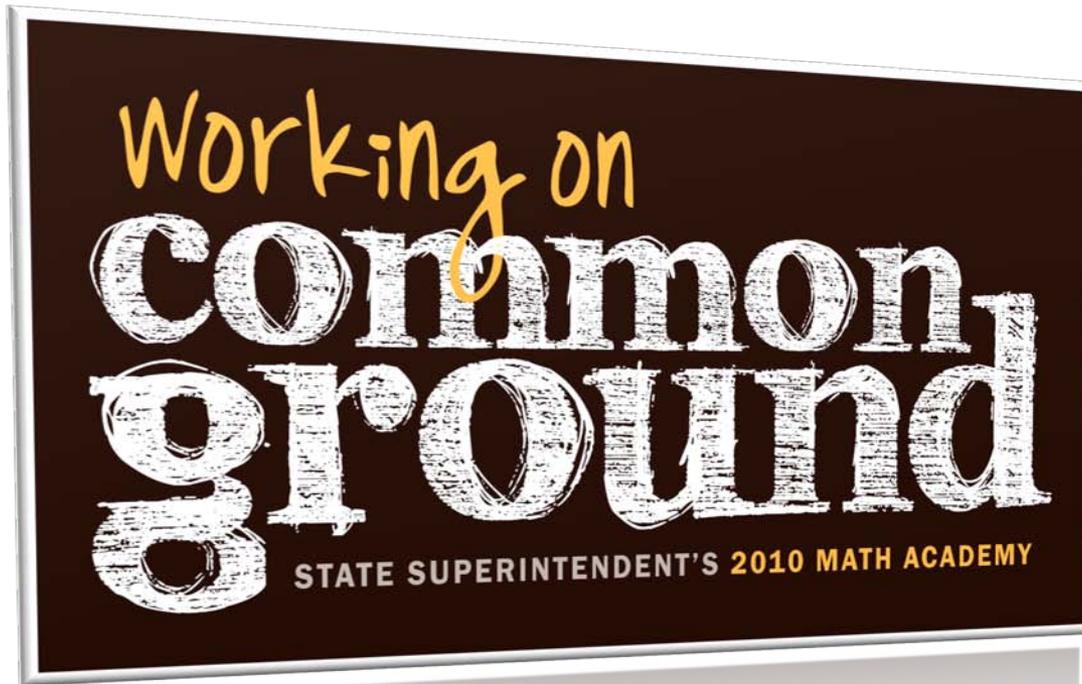
Why are we talking about CCSS?

How closely are the CCSS aligned to PASS?

How is the transition actually going to happen?

QUESTIONS FOR TODAY

**WHY ARE WE TALKING
ABOUT CCSS?**



*Standards Development
Common Core State Standards
Benefits to Oklahoma*

STANDARDS DEVELOPMENT

The State Board of Education shall adopt curricular standards for instruction of students in the public schools of this state that are necessary to ensure there is attainment of desired levels of competencies in a variety of areas to include language, mathematics, science, social studies and communication. . . . The core curriculum shall be designed to teach the competencies for which students shall be tested . . . and shall be designed to prepare all students for employment and/or postsecondary education.

70 O.S. § 11-103.6

STANDARDS DEVELOPMENT

By August 1, 2010, the State Board of Education shall adopt revisions to the subject matter curriculum adopted by the State Board for English Language Arts and Mathematics as is necessary to align the curriculum with the K-12 Common Core State Standards developed by the Common Core State Standards Initiative, an effort coordinated by the National Governors Association Center for Best Practices and the Council of Chief State School Officers. The revised curriculum shall reflect the K-12 Common Core State Standards in their entirety and may include additional standards as long as the amount of the additional standards is not more than fifteen percent (15%) of the K-12 Common Core State Standards.

2010 Amendment to 70 O.S. § 11-103.6(a)



STANDARDS DEVELOPMENT

- ◆ Research shows that quality standards must reflect:
 - ◆ College and career readiness
 - ◆ Content, concepts, and skills
 - ◆ Coherence, focus, and rigor

STANDARDS DEVELOPMENT

◆ College and Career Readiness means:

... shall be designed to prepare all students for employment and/or postsecondary education ...

70 O.S. § 11-103.6

STANDARDS DEVELOPMENT

- ◆ **Content:** Addresses rigorous content appropriate for each grade level
- ◆ **Concepts:** Develops deep understanding through concept attainment
- ◆ **Skills:** Facilitates acquisition of skills through authentic experiences

STANDARDS DEVELOPMENT

- ◆ **Coherence:** A reflection of the structure of the discipline being taught
- ◆ **Focus:** Limiting the number of items included in a curriculum to allow for deeper exploration of the subject matter
- ◆ **Rigor:** More challenging and demanding when compared to international standards

COMMON CORE STATE STANDARDS

- ◆ **Core standards in:**
 - ◆ English language arts
 - ◆ Mathematics
- ◆ **State-led and developed**
 - ◆ 48 states, D.C., 2 territories

COMMON CORE STATE STANDARDS

“Common Core standards define the knowledge and skills students should have within their K-12 education careers so that they will graduate high school able to succeed in entry-level, credit-bearing academic college courses and in workforce training programs.”

NGA & CCSSO, 2010



COMMON CORE STATE STANDARDS

- ◆ Fewer, clearer, and higher
- ◆ Aligned with college and work expectations
- ◆ Internationally benchmarked
- ◆ Include rigorous content *and* application of high-order skills
- ◆ Build upon strengths and lessons of current state standards
- ◆ Evidence and/or research based

COMMON CORE STATE STANDARDS

- ◆ Memorandum of Agreement, Summer 2009
- ◆ Draft college- and career-readiness standards, Sept 2009
- ◆ Draft K-12 standards/learning progressions, March 2010
- ◆ Final K-12 standards/learning progressions including the college- and career-readiness benchmarks, June 2010

MATHEMATICS COMMON CORE

◆ Descriptions of Mathematical Practice

Examples: reasoning, problem solving

◆ Standards include:

- ◆ Concepts and skills leading to college and career readiness in various content domains
- ◆ Concepts and skills leading to advanced mathematics

MATHEMATICS COMMON CORE

PASS (Grade 4):

- Use 0, $\frac{1}{2}$, and 1 or 0, 0.5, and 1 as benchmarks and place additional fractions, decimals, and percents on a number line (e.g., $\frac{1}{3}$, $\frac{3}{4}$, 0.7, 0.4, 62%, 12%).
- Compare, add, or subtract fractional parts (fractions with like denominators and decimals) using physical or pictorial models. (e.g., egg cartons, fraction strips, circles, and squares).

CCSS (Grade 4): Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

ENGLISH LANGUAGE ARTS COMMON CORE

◆ English Language Arts Strands

- ◆ Reading
- ◆ Writing
- ◆ Speaking and Listening
- ◆ Language

◆ Standards include:

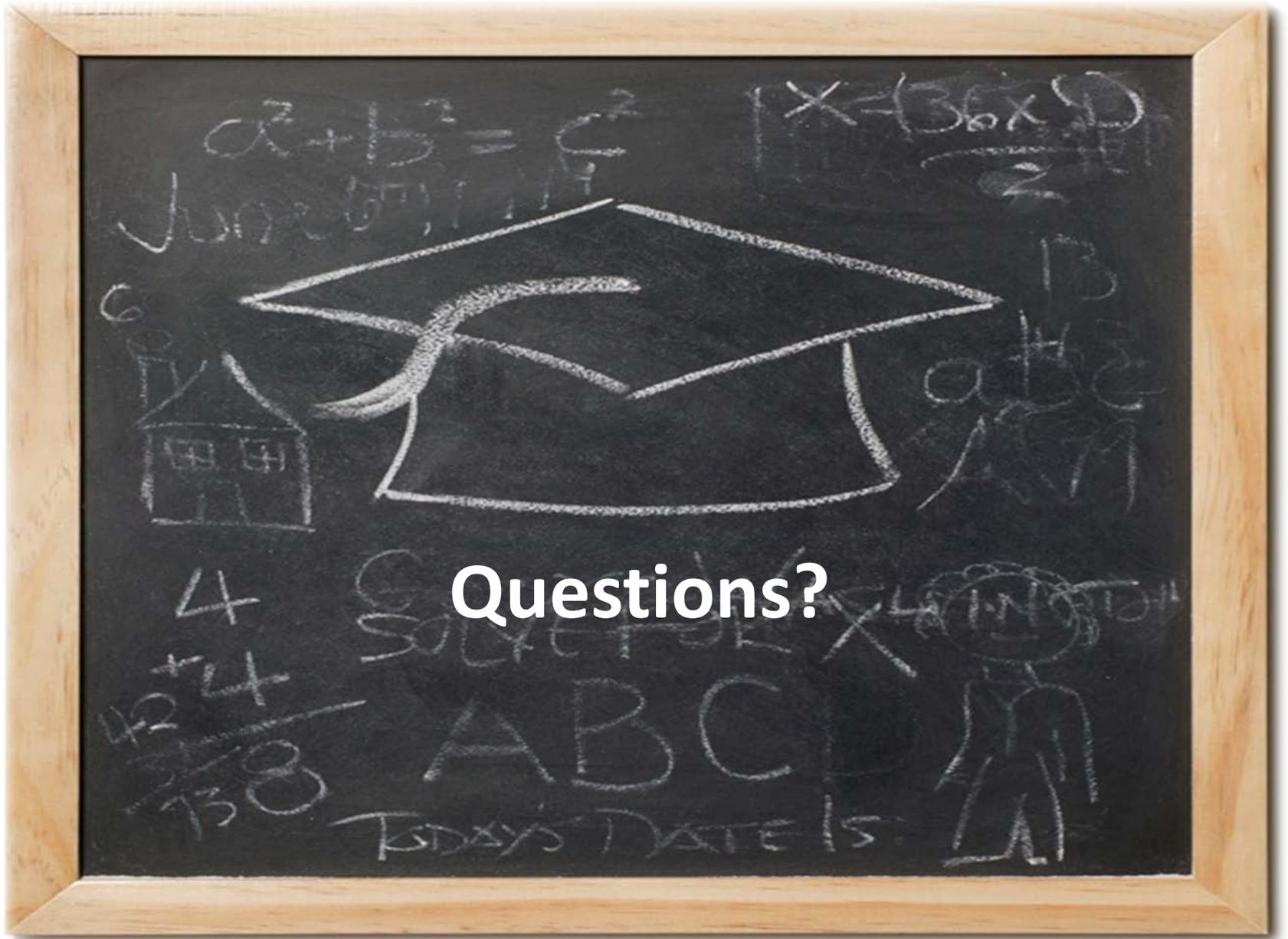
- ◆ Knowledge and skills leading to college and career readiness
- ◆ Progressions of learning across the grades

LITERACY COMMON CORE

- ◆ **Literacy Standards for History/Social Studies, Science, and Technical Subjects**
 - ◆ Reading
 - ◆ Writing
- ◆ **Standards include:**
 - ◆ Knowledge and skills needed for communication within the content areas
 - ◆ Progressions of learning across the grades

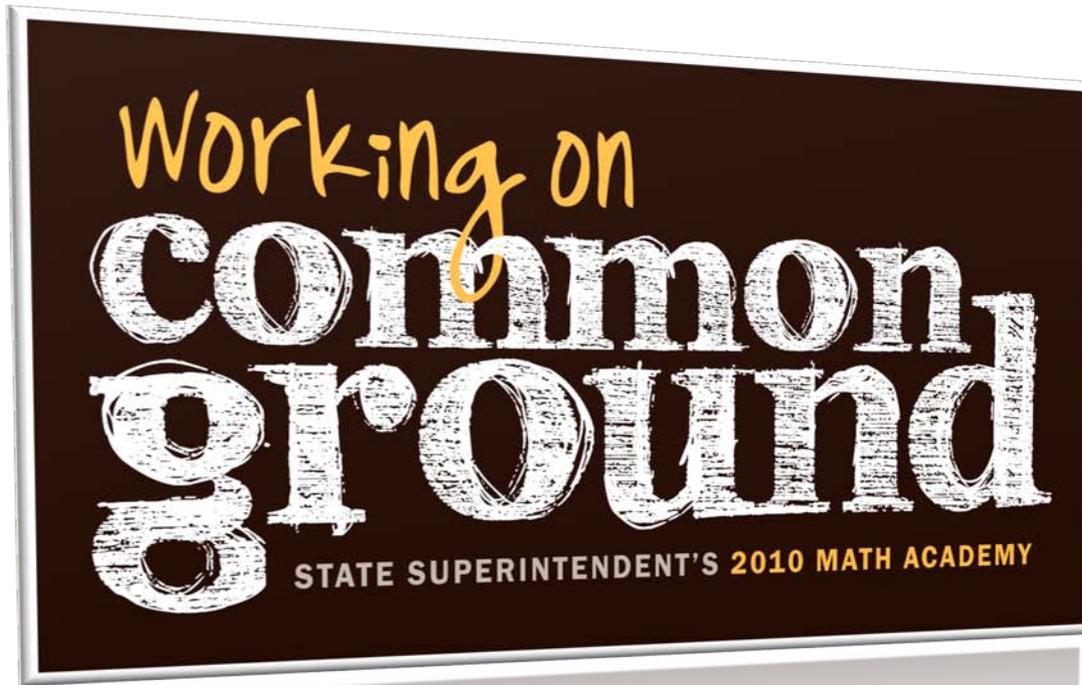
BENEFITS TO OKLAHOMA

- ◆ **Common Standards**
 - ◆ Mobility of Students
 - ◆ Mobility of Teachers
 - ◆ Development of Curriculum Materials
 - ◆ Development of Professional Resources
- ◆ **Common Assessments**
 - ◆ Comparability Across States
 - ◆ Variety of Assessment Items and Types



QUESTIONS?

**HOW CLOSELY ALIGNED ARE
THE CCSS TO PASS?**



Similarities

Differences

Curriculum

SIMILARITIES: PAIRED STANDARDS ACTIVITY

CCSS (Grade 5): Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

PASS (Grade 5): Apply the concept of place value of whole numbers through hundred millions (9 digits) and model, read, and write decimal numbers through the thousandths.

SIMILARITIES: PAIRED STANDARDS ACTIVITY



SIMILARITIES:

PAIRED STANDARDS ACTIVITY

CCSS

(EXAMPLE – Grade 5): Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

PASS

(EXAMPLE – Grade 5): Apply the concept of place value of whole numbers through hundred millions (9 digits) and model, read, and write decimal numbers through the thousandths.

PASS

(Grade 1): Recognize and apply the commutative and identity properties of addition using models and manipulatives to develop computational skills (e.g., $2 + 4 = 4 + 2$, $3 + 0 = 3$).

CCSS

(Grade 1): Apply properties of operations as strategies to add and subtract. *Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)*

CCSS

(Grade 2): Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

PASS

(Grade 2): Measure objects using standard units (e.g., measure length to the nearest foot, inch, and half inch).

CCSS

(Grade 4): Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

PASS

(Grade 4): Identify, draw, and construct models of intersecting, parallel, and perpendicular lines. Identify and compare angles equal to, less than, or greater than 90 degrees (e.g., use right angles to determine the approximate size of other angles).

SIMILARITIES:

PAIRED STANDARDS ACTIVITY

PASS

(Grade 6): Use substitution to simplify and evaluate algebraic expressions (e.g., if $x = 5$ evaluate $3 - 5x$). Build and recognize models of multiples to develop the concept of exponents and simplify numerical expressions with exponents and parentheses using order of operations.

CCSS

(Grade 6): Write and evaluate numerical expressions involving whole-number exponents. Write, read, and evaluate expressions in which letters stand for numbers.

PASS

(Grade 7): Central Tendency: Compute the mean, median, mode, and range for data sets and understand how additional data or outliers in a set may affect the measures of central tendency.

CCSS

(Grade 7): Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

CCSS

(Grade 7): Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

PASS

(Grade 7): Determine the probability of an event involving "or", "and", or "not" (e.g., on a spinner with one blue, two red and two yellow sections, what is the probability of getting a red or a yellow?).

PASS

(Algebra): Solve linear equations by graphing or using properties of equality. Solve linear inequalities by graphing or using properties of inequalities.

CCSS

(Algebra): Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

SIMILARITIES:

PAIRED STANDARDS ACTIVITY

PASS

(Data Analysis): Collect data involving two variables and display on a scatter plot; interpret results using a linear model/equation and identify whether the model/equation is a line best fit for the data.

CCSS

(Data Analysis): Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Fit a linear function for a scatter plot that suggests a linear association.

CCSS

(Geometry): Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

PASS

(Geometry): Similarity and Congruence: Determine and verify the relationships of similarity of triangles, using algebraic and deductive proofs. Use ratios of similar 2-dimensional figures to determine unknown values, such as angles, side lengths, perimeter or circumference, and area. Determine and verify the relationships of congruency of triangles, using algebraic and deductive proofs. Use the relationships of congruency of 2-dimensional figures to determine unknown values, such as angles, side lengths, perimeter or circumference, and area.

PASS

(Algebra): Systems of Equations: Use either one quadratic equation and one linear equation or two quadratic equations to solve problems.

CCSS

(Algebra): Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.

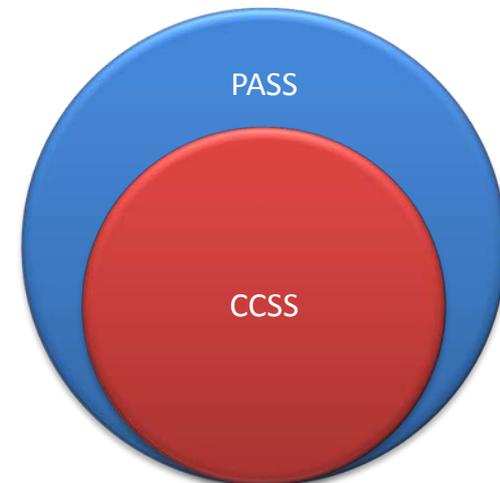
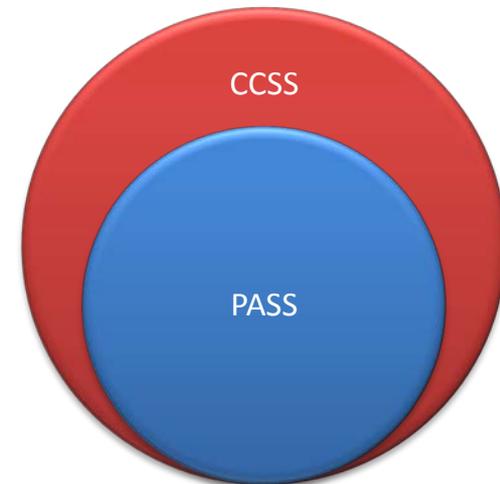
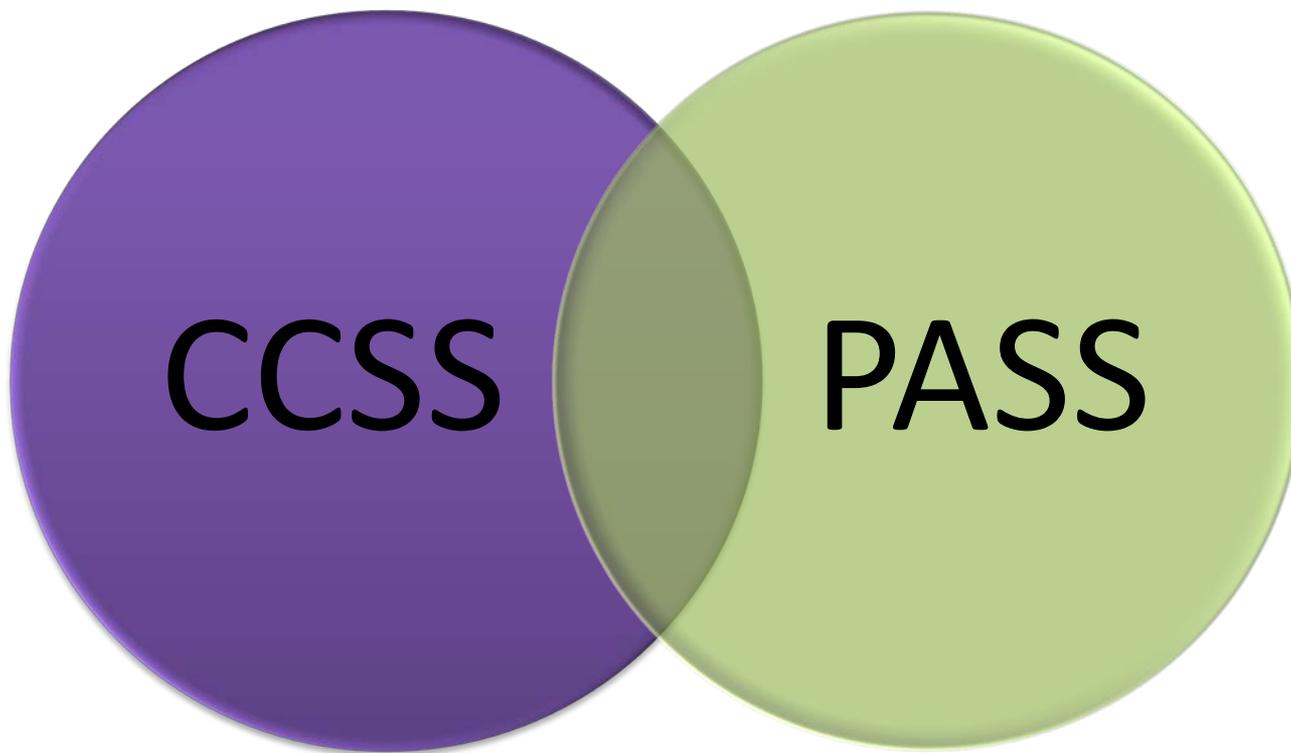
CCSS

(Algebra): Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.

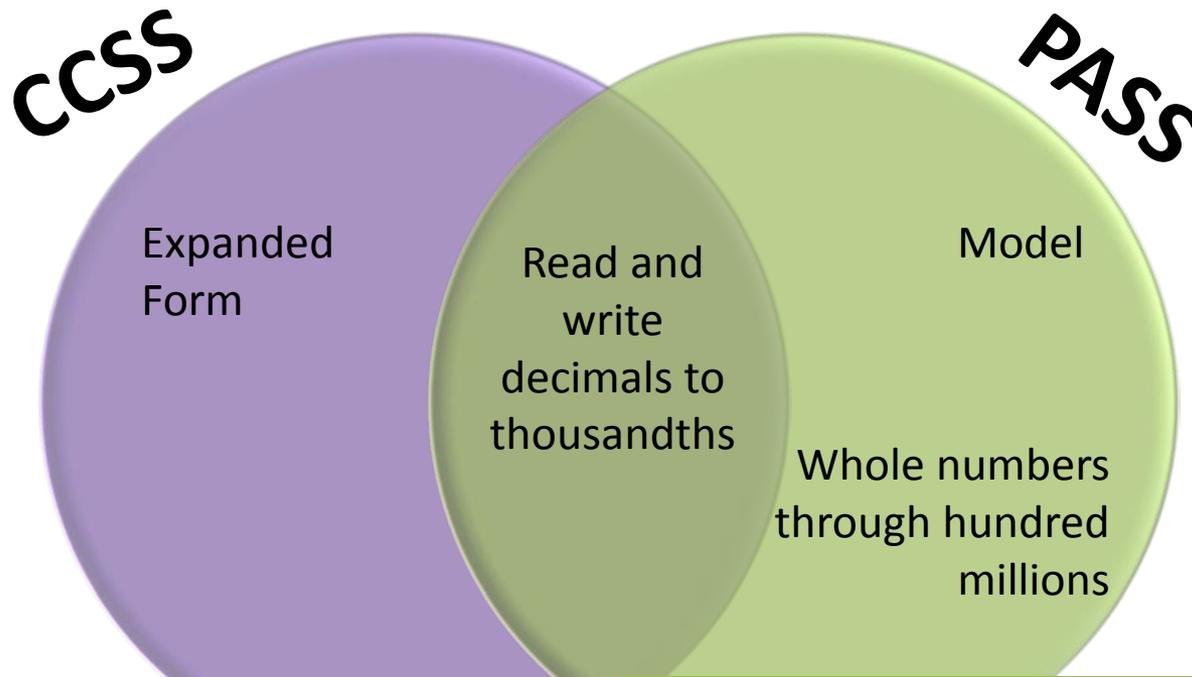
PASS

(Algebra): Given the graph of a rational function, identify the x- and y-intercepts, vertical asymptotes, using various methods and tools which may include a graphing calculator.

SIMILARITIES AND DIFFERENCES: VENN DIAGRAM ACTIVITY



SIMILARITIES AND DIFFERENCES: VENN DIAGRAM ACTIVITY



CCSS (Grade 5): Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

PASS (Grade 5): Apply the concept of place value of whole numbers through hundred millions (9 digits) and model, read, and write decimal numbers through the thousandths.

SIMILARITIES AND DIFFERENCES: VENN DIAGRAM ACTIVITY



CURRICULUM: LESSON PLANNING ACTIVITY

Describe a lesson you currently teach that addresses one of the sets of Paired Standards.

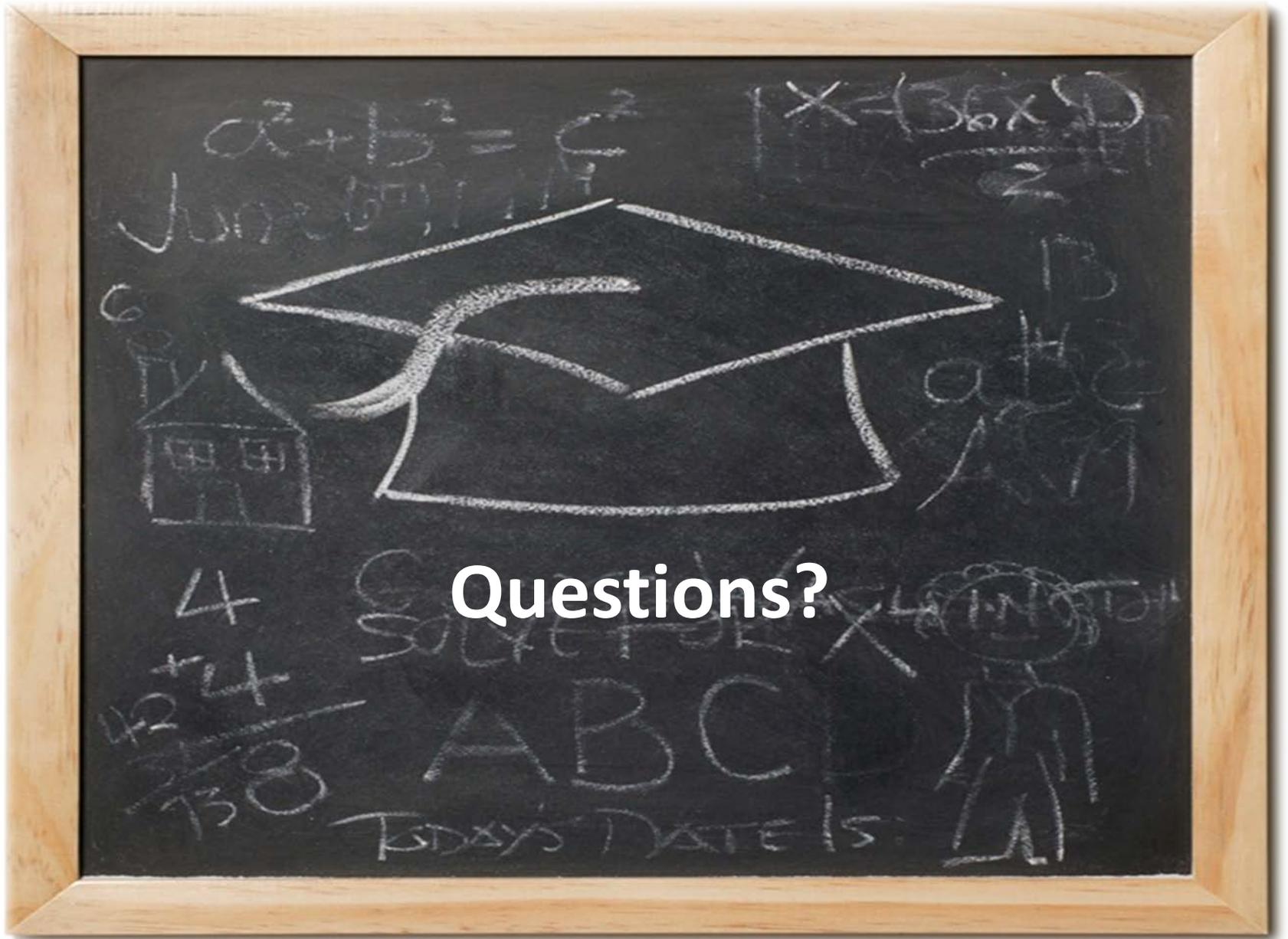
Which parts of that lesson address both *PASS* and Common Core State Standards?

Which parts of that lesson address only *PASS* or only Common Core State Standards?

How does this lesson need to be modified to address other aspects of Common Core State Standards not already addressed?

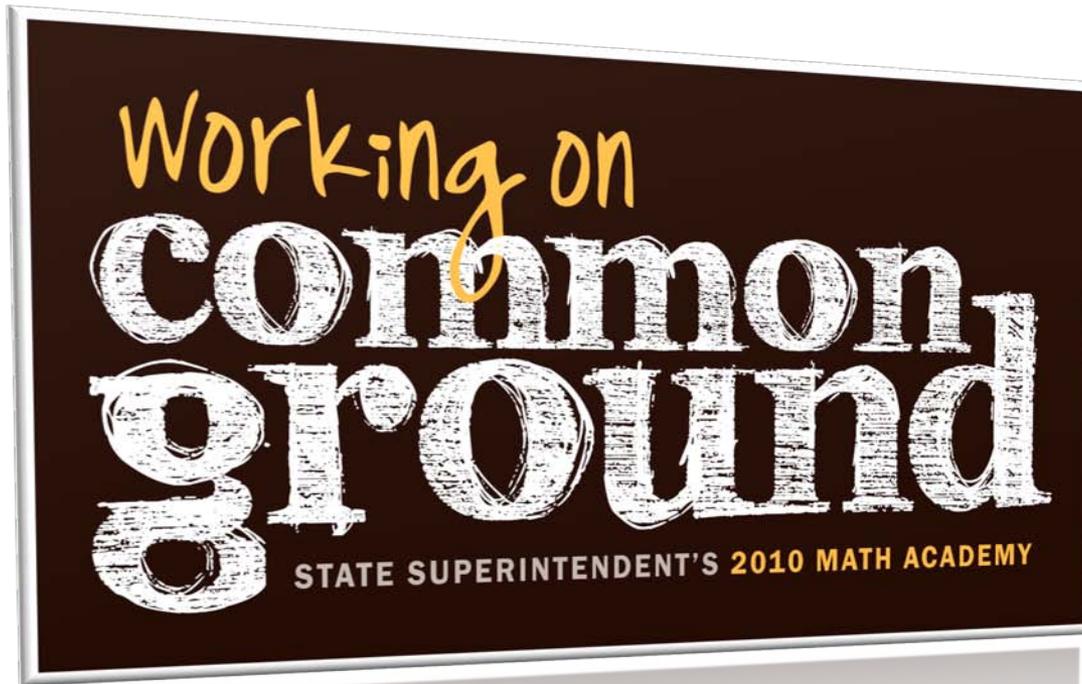
CURRICULUM: LESSON PLANNING ACTIVITY





QUESTIONS?

HOW IS THE TRANSITION
TO CCSS ACTUALLY GOING
TO HAPPEN?



Implementation Timeline

Standards Review

Resources

IMPLEMENTATION TIMELINE

Transition:

- Teacher development
- Local curriculum revision
- Test development

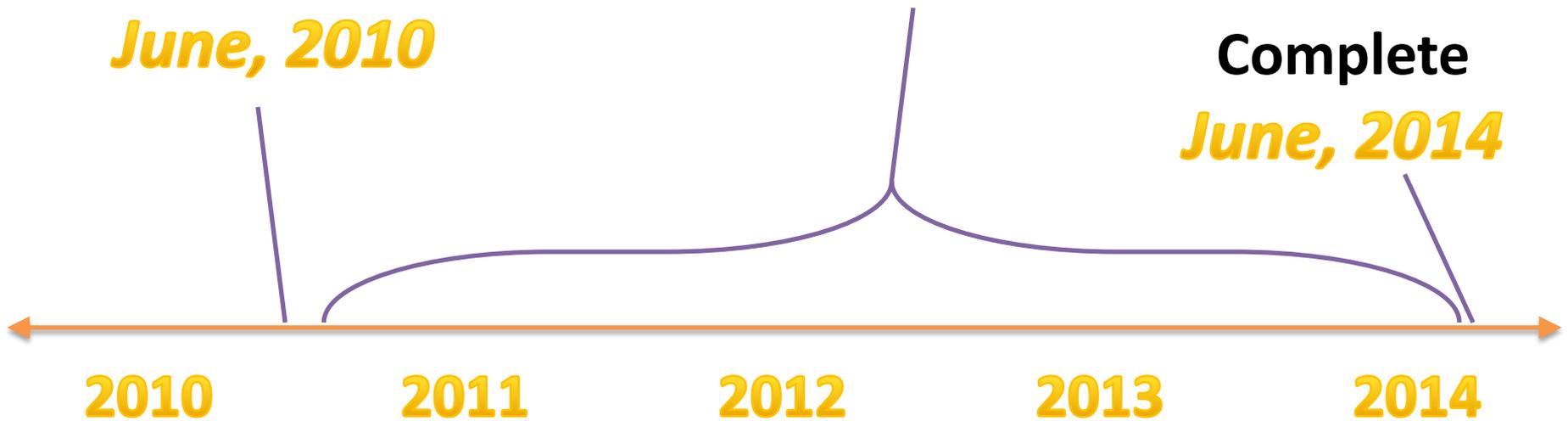
**State Board Adopts
Common Core State
Standards**

June, 2010

2010 - 2014

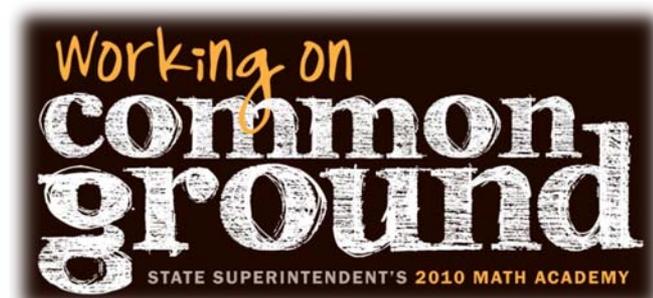
**Transition
Complete**

June, 2014



IMPLEMENTATION TIMELINE

- June 24, 2010 – Adopted
- 2010-2011 School Year – Districts develop and begin implementing a transition plan
- 2010-2014 – Oklahoma State Department of Education assists districts in transition
- 2014-2015 – Full implementation of Common Core State Standards



IMPLEMENTATION TIMELINE

- Assess *PASS*
 - 2010-2011 School Year
 - 2011-2012 School Year
 - 2012-2013 School Year
 - 2013-2014 School Year
- Assess CCSS
 - 2014-2015 School Year via Common Assessments

STANDARDS REVIEW

*Each area of subject matter curriculum, except for technology curriculum, adopted by the State Board of Education for implementation by the beginning of the 2003-04 school year shall be **thoroughly reviewed by the State Board every six (6) years** according to and in coordination with the existing subject area textbook adoption cycle, and **the State Board shall implement any revisions in such curriculum deemed necessary to achieve further improvements in the quality of education for the students of this state.***

70 O.S. § 11-103.6(a)

RESOURCES

- As you develop and implement your district transition plan, the following resources will be available:
 - Matching and Rating Report
 - Side-by-Side Crosswalk
 - Model Lesson Plans and Sample Assessment Items

RESOURCES



Achieving the
COMMON CORE

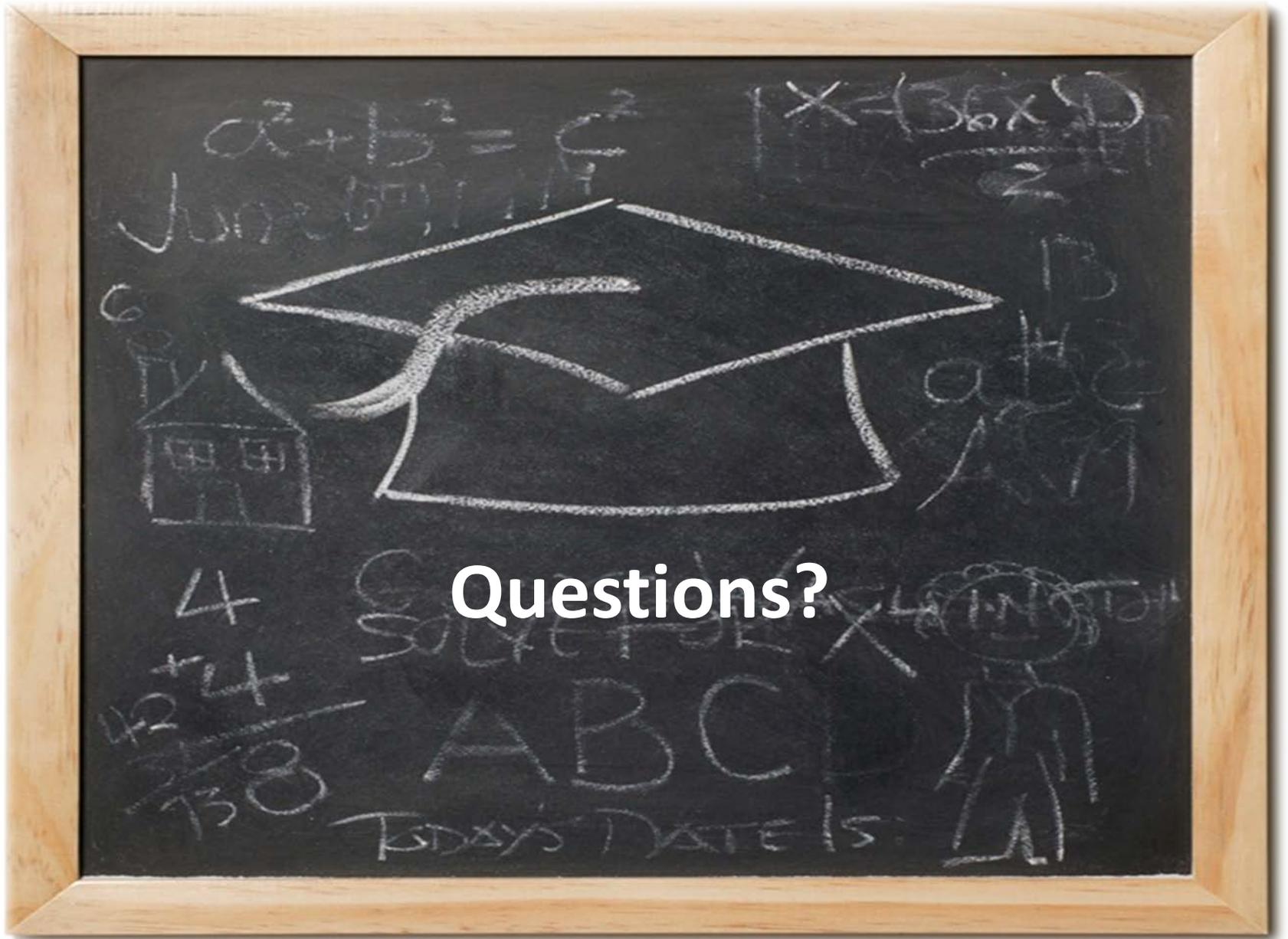


Surveys of Enacted Curriculum

State Collaborative on Assessment and Student Standards

RESOURCES, CONTINUED

- Transition Planning Workshops, Videoconferences, and Webinars
- Curriculum Development Workshops, Videoconferences, and Webinars
- Continuous Support and Technical Assistance
- Ongoing Professional Development



Questions?

RESOURCES, CONTINUED

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<http://sde.state.ok.us/Curriculum/CommonCore/default.html>