COLORADO DEPARTMENT of EDUCATION

Colorado's District Sample Curriculum Project

Mary Pittman – Mathematics Content Specialist

Brian Sevier- Standards Project Director

http://www.cde.state.co.us/standardsandinstruction/index.asp

Office of Standards and Instructional Support

Colorado's District Sample Curriculum Project

Rationale/origins

From its beginnings, the field of educators across the state has been the force behind this project. This will continue to be the case as the project and its outcomes are:

- **Driven** by the field
- **Generated** by the field
- **Relevant** to the field

As the next step in standards support for the state, the project is oriented around three fundamental goals:

- **Facilitating successful** implementation of the CAS
- **Helping build** the capacity of Colorado educators to create curriculum materials based on the standards
- **Bringing together** Colorado's educators to create a variety of samples that reflect the diversity of our school districts

Colorado's District Sample Curriculum Project

Project phases and major outcomes

Phase One:

- Work with Colorado educators to create unit overview samples based on the CAS for all subjects and grades.

Phase Two:

- Conduct area workshops across the state to build capacity around the process and products associated with the Project

Phase Three:

- Work with Colorado educators to create units based on the overview samples for all subjects and grades based on select unit overviews

Colorado's District Sample Curriculum Project

Phase One outcomes

Participants

- 500+ educator participants
- 47 of 64 counties represented
- 61 of 178 districts represented

Products

- 670 unit overviews- all content areas (k-12) and STEM (1st, 8th, high school)
- Coded to the CAS
- Teacher/educator authorship and district affiliation on every page of unit overviews

Postings

- January 31st- Standards and Instructional website-Individual content area and Sample Curriculum Project webpages
- Coming months eNet Colorado access (DREAM Marketplace)

Colorado's District Sample Curriculum Project

Sample unit overviews

The Colorado Department of Education (CDE) defines curriculum as an organized plan of instruction for engaging students in mastering the standards.

The samples:

- Represent the translation of the CAS into unit overviews for all (10) content areas
- Illuminate possibilities for sequencing grade-level expectations (GLEs) and content-specific standards across courses/years
- Offer one possible foundation for exploring standards-based unit and lesson-plan development

A closer look at a Kindergarten mathematics example to:

- Highlight major components of the template
- Explain key terms
- Offer possible uses for the samples

Curriculum Development Course at a Glance
Planning for Kindergarten Mathematics

Content Area	Mathematics	Grade Level	Kindergarten
Course Name/Course Code			

Standard	Grade Level Expectations (GLE)	GLE Code
1. Number Sense, Properties, and Operations	1. Whole numbers can be used to name, count, represent, and order quantity	MA10-GR.K-S.1-GLE.1
	2. Composing and decomposing quantity forms the foundation for addition and subtraction	MA10-GR.K-S.1-GLE.2
2. Patterns, Functions, and Algebraic Structures	Expectations for this standard are integrated into the other standards at this grade level.	
3. Data Analysis, Statistics, and Probability	Expectations for this standard are integrated into the other standards at this grade level.	
4. Shape, Dimension, and Geometric Relationships	1. Shapes are described by their characteristics and position; and created by composing and decomposing	MA10-GR.K-S.4-GLE.1
	2. Measurement is used to compare and order objects	MA10-GR.K-S.4-GLE.2

MA10-GR.K-S.4-GLE.2

Colorado 21st Century Skills

Critical Thinking and Reasoning: *Thinking Deeply, Thinking Differently*

Information Literacy: *Untangling the Web*

Collaboration: *Working Together, Learning Together*

Self-Direction: *Own Your Learning*

Invention: *Creating Solutions*

Mathematical Practices:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Unit Titles	Length of Unit/Contact Hours	Unit Number/Sequence
Building Block Numbers	5 weeks	Before Tricky Teens unit
Shapes all Around us	6-7 weeks	
Put it Together and Take it Apart	6 weeks	
Tricky Teens and Beyond	6 weeks	
Breaking apart is hard to do	5 weeks	After Put it Together and Take it Apart unit and Tricky Teens and Beyond unit

4. Civics	1. Analyze and debate multiple perspectives on an issue
	2. The origins, structure, and functions of the Colorado gov

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Unit Titles
Baby Steps: From Territory to Statehood

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Curriculum Development Overview
Unit Planning for Kindergarten Mathematics

Unit Title	Building Block Numbers		**Length of Unit**	5 weeks
Focusing Lens	Representation Comparison	**Standards and Grade Level Expectations Addressed in this Unit**	MA10-GR.K-S.1-GLE.1	
Inquiry Questions	• Is there a wrong way to count? (MA10-GR.K-S.1-GLE.1-IQ.2) • Why do we count things? (MA10-GR.K-S.1-GLE.1-IQ.1)			
Unit Strands	Counting and Cardinality, Personal Financial Literacy			
Concepts	Counting, cardinality, number names, quantity, numerals, sequence, zero, equivalence			

Generalizations **My students will Understand that...**	**Guiding Questions** **Factual**	**Conceptual**
When counting obje one number name a object (one-to-one c GLE.1-EO.b.i)		one number name with each n counting? en all the objects in a set have
Number names are number names prin		y the number names in the ime we count?
The order in which c number of objects, a even if the objects a (MA10-GR.K-S.1-GLE		to count? Why?
The last number nar the number of objec many," (cardinal pri		e how many?
The principles of counting (one-to-one correspondence, stable order of number names, order irrelevance, and cardinal) applies not only to objects with the same attributes but also different attributes or non-visual things such as sounds or actions (abstraction principle) (MA10-GR.K-S.1-GLE.1-EO.b)	What types of things can be counted?	How do you count sounds? Actions?

Generalizations
My students will Understand that...

When counting objects, each object is paired with one and only one number name and each number name with one and only one object (one-to-one correspondence principle) (MA10-GR.K-S.1-GLE.1-EO.b.i)

Curriculum Development Overview
Unit Planning for Kindergarten Mathematics

Unit Title	Building Block Numbers		Length of Unit	5 weeks
Focusing Lens(es)	Representation Com	Standards and Grade	MA10-GR.K-S.1-GLE.1	
Inquiry Questions (Engaging-Debatable):	• •			
Unit Strands	Cour			
Concepts	Cour			

Generalizations

My students will **Understand** that...

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Generalizations My students will Unders		Conceptual
When counting objects, eac one number name and each object (one-to-one correspo GLE.1-EO.b.i)		ne number name with each counting? en all the objects in a set have

Factual	Conceptual
How many number names do you say with each object you are counting?	Why do we only use one number name with each object we touch when counting? How do you know when all the objects in a set have been counted?

The principles of counting (one-to-one correspondence, stable order of number names, order irrelevance, and cardinal) applies not only to objects with the same attributes but also different attributes or non-visual things such as sounds or actions (abstraction principle) (MA10-GR.K-S.1-GLE.1-EO.b)	What types of things can be counted?	How do you count sounds? Actions?

Instructional Support

Key Knowledge and Skills: **My students will…**	*What students will know and be able to do are so closely linked in the concept-based discipline of mathematics. Therefore, in the mathematics samples what students should know and do are combined.*

- Count forward to 10 by ones from any given number (MA10-GR.K-S.1-GLE.1-EO.a.i., a.ii)
- Write numbers 0 to 10 as numerals (MA10-GR.K-S.1-GLE.1-EO.a.iii)
- Represent a number of objects with a written numeral with 0 representing a count of no objects (MA10-GR.K-S.1-GLE.1-EO.a.iii)
- Count as many as 10 things in a scattered configuration (MA10-GR.K-S.1-GLE.1-EO.b.ii)
- Count out a specified number of objects for quantities less than 10 (MA10-GR.K-S.1-GLE.1-EO.b.ii)
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (MA10-GR.K-S.1-GLE.1-EO.c.i)
- Compare two numbers between 1 and 10 as written numbers (MA10-GR.K-S.1-GLE.1-EO.c.ii)
- Identify groups of objects fewer than five without counting (MA10-GR.K-S.1-GLE.1-EO.c.iii) *

Critical Language: includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline. EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: *"Mark Twain exposes the hypocrisy of slavery through the use of satire."*	
A student in _____ can demonstrate the ability to apply and comprehend critical language through the following statement(s):	*I know there are more red bears than blue bears because I counted five red bears and three blue bears. There are ten bears and the red one is the second bear.*
Academic Vocabulary:	Count, greater than, less than, equal to, compare, objects
Technical Vocabulary:	Quantity, numeral, number, number names, zero, represent

***Denotes connection to Personal Financial Literacy (PFL)**

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Vocabulary: Choosing Words to Teach

	Explanation	Examples
Tier 1	Basic words, well known, often used •The most familiar words •Known by average 3rd grader	clock, baby, happy
Tier 2* Academic Vocabulary	High frequency words used **across several content areas** •Important to academic success •Not limited to one content area	coincidence, absurd, hasty, perseverance OR deconstruct, analyze, interpret, synthesize
Tier 3* Technical Vocabulary	Low-frequency words, often **limited to specific content areas** •Rare words •Often content-area related	nucleus, osmosis, archaeologist

Quick Terms Reference Guide

- **The focusing lens** brings together concepts and content for deeper thinking and meaning making
- **Inquiry Questions** engage students in the unit of study
- **Concepts** are timeless, universal, and provide a *breadth* of understanding
- **Topics** are locked in time, place, or situation (embedded in the critical content)
- **Generalizations** are an essential understanding that shows a relationship between two or more concepts
- **Guiding questions** are factual AND conceptual questions tied directly to the generalizations

Colorado's District Sample Curriculum Project

- Samples:
  - The samples offer organizing structures for addressing the grade-level expectations (GLEs), evidence outcomes (EOs) and 21st century skills that build students' mastery of the standards at each grade level.
- Design reflects emphasis on concepts and content in Colorado Academic Standards
  - Centers around ideas
  - Supports teaching to greater intellectual depth
  - Emphasizes knowledge TRANSFER and APPLICATION
    - Generalizations (Big understandings) transfer
    - Concepts transfer
    - Skills transfer
- Design reflects feedback from educators across the state with technical assistance from Dr. Lynn Erickson
  - This is Colorado's Template!

Colorado's District Sample Curriculum Project

Next Steps:

Phase Three:

- Develop an instructional-unit template for all subjects and grades
- Work with Colorado educators to create unit samples for all subjects and grades based on select unit overviews
- Three-four day workshops in late July and early August
- Look for the participation application on the Standards and Instructional Support website in late spring

http://www.cde.state.co.us/StandardsAndInstruction/SampleCurriculumProject.asp

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Related Support Offices

- Accountability and Support
- Assessment
- Career and Technical Education
- Colorado Content Collaboratives
- Educator Effectiveness

Colorado's District Sample Curriculum Project

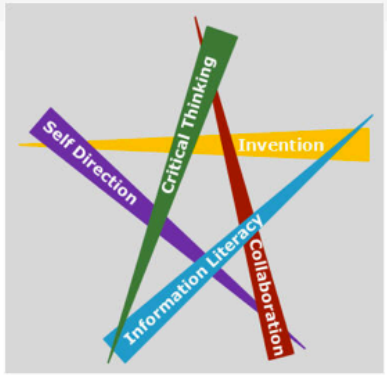
Teacher-created curriculum samples

This fall, over 500 Colorado educators, representing 61 school districts, participated in curriculum design workshops that resulted in the creation of 670 curriculum samples based on the Colorado Academic Standards (CAS). Utilizing a Colorado-designed and refined template, the samples provide organizing structures for addressing the grade-level expectations (GLEs), evidence outcomes (EOs) and 21st Century Skills that build students' mastery of the standards at each grade level. As voluntary resources for districts, the samples:

- Represent the translation of the CAS into unit overviews for all (10) content areas, grades k-12
- Illuminate possibilities for sequencing grade-level and content-specific standards across courses/years
- Offer one possible foundation for exploring standards-based unit and lesson-plan development

The samples, the blank template upon which they are based, and a template with definitions can currently be accessed on this website. Together, these resources were created by and for Colorado educators to support school districts as they intentionally plan for the successful implementation of the CAS in the 2013-14 SY. Indeed, initial feedback indicates that districts can envision utilizing the samples and blank template as starting points for the creation of their own curricula, as examples to build upon and augment, as crosswalk documents for curricular comparisons, and other purposeful and individualized uses.

In the coming months, eNet Colorado will house the samples and templates in order to enhance this customizability and allow Colorado school districts and educators further opportunities to explore the instructional potential of these tools.



Click here to access resources for Colorado's District Sample Curriculum Project and the template utilized in the creation of these curriculum samples.

http://www.cde.state.co.us/StandardsAndInstruction/SampleCurriculum-samples.asp

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Colorado's District Sample Curriculum Project

All the curriculum samples are accessible by content area and by grade levels and will be housed here until their permanent home is established at eNet Colorado. Remember that we would love to get feedback regarding the use for and desired supports around the samples.

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Questions related to Colorado's District Sample Curriculum Project should be directed to Brian Sevier.

- Comprehensive Health Curriculum Samples
- Dance Curriculum Samples
- Drama and Theatre Arts Curriculum Samples
- Mathematics Curriculum Samples
- Music Curriculum Samples
- Physical Education Curriculum Samples
- Reading, Writing, and Communicating Curriculum Samples
- Science Curriculum Samples
- Social Studies Curriculum Samples
- STEM Curriculum Samples
- Visual Arts Curriculum Samples
- World Languages Curriculum Samples
- Link to All Samples by Content Area

http://www.cde.state.co.us/StandardsAndInstruction/Curriculum/Mathematics.asp

Standards And Instruction
Colorado Standards
District Sample Curriculum Project

- Framework
- Blank Templates
- Sample Curriculum
- Presentations and Resources
- Participation
- Next Phase

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- Colorado Content Collaboratives
- Educator Effectiveness

Mathematics Sample Curriculum

Initial Samples Released January 31, 2013

Hello mathematics educators,

I am proud to present the k-12 mathematics curriculum samples created by Colorado educators. Working with facilitators Larry Brady (Garfield RE-2), Bev Tarpley (Cheyenne Mountain 12), Cassie Harrelson (Aspen 1), Gretchen Hazelwood (Douglas County RE 1), and Kate Canine (Poudre R-1) this past fall, over 40 educators came together to translate the Colorado Academic Standards (CAS) into curriculum.

The template upon which all of the samples are based was designed and refined by Colorado educators to highlight what students should understand, know and be able to do at the end of a given unit (detailed description of the curriculum template components). There are some unique aspects to the mathematics samples at particular grade levels, which are documented in the bullet points below.

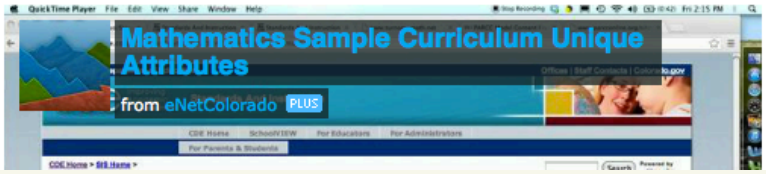
Together, these samples are intended to support districts' transition to the CAS and the development of standards-based instructional practices by providing a voluntary resource for districts with possible options for sequencing the CAS across a course or year. Please click here to share your thoughts regarding these support resources.

Dr. Mary Pittman
Math Content Specialist

Questions?: E-mail the Math Content Specialist

Update February 15, 2013. In the original posting of the Mathematics samples, we embedded what students should both know and be able to do, as a result of the teaching of a unit, in the skills section of the template. Feedback from the field, however, suggested that we specifically highlight and clarify these knowledge-skill connections. To accomplish this, we have slightly amended the "know and do" section to make the samples more accessible and user-friendly.

To learn more about the Math curriculum samples watch this presentation:



Math Samples

- High School - Traditional
  - Algebra II (Word or PDF)
  - Geometry (Word or PDF)
  - Algebra I (Word or PDF)
- High School - Integrated
  - Integrated 3 (Word or PDF)
  - Integrated 2 (Word or PDF)
  - Integrated 1 (Word or PDF)
- 8th Grade (Word or PDF)
- 7th Grade (Word or PDF)
- 6th Grade (Word or PDF)
- 5th Grade (Word or PDF)
- 4th Grade (Word or PDF)
- 3rd Grade (Word or PDF)
- 2nd Grade (Word or PDF)
- 1st Grade (Word or PDF)
- Kindergarten (Word or PDF)

Unique components in the math samples::

- The unit strands for each unit overview are domains from the CCSS of mathematics.
- The Standards for Mathematical Practices are included alongside the 21st Century Skills of the Colorado Academic Standards.
- Personal financial literacy evidence outcomes for mathematics are embedded within the Key Skill sections and denoted by *.
- The PARCC Model Content Frameworks informed the creation of the unit overviews and delineation of the high school standards into both traditional and integrated course sequences.
- The learning trajectories from Turn-On CC Math supported the creation of generalizations throughout the K-8 unit overviews.

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