



***Update from the  
Math & Science Bureau, &  
Higher Ed Dept***

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# **Improving K-12 Math and Science Education in New Mexico**

Statewide Connectivity (Ch.4)

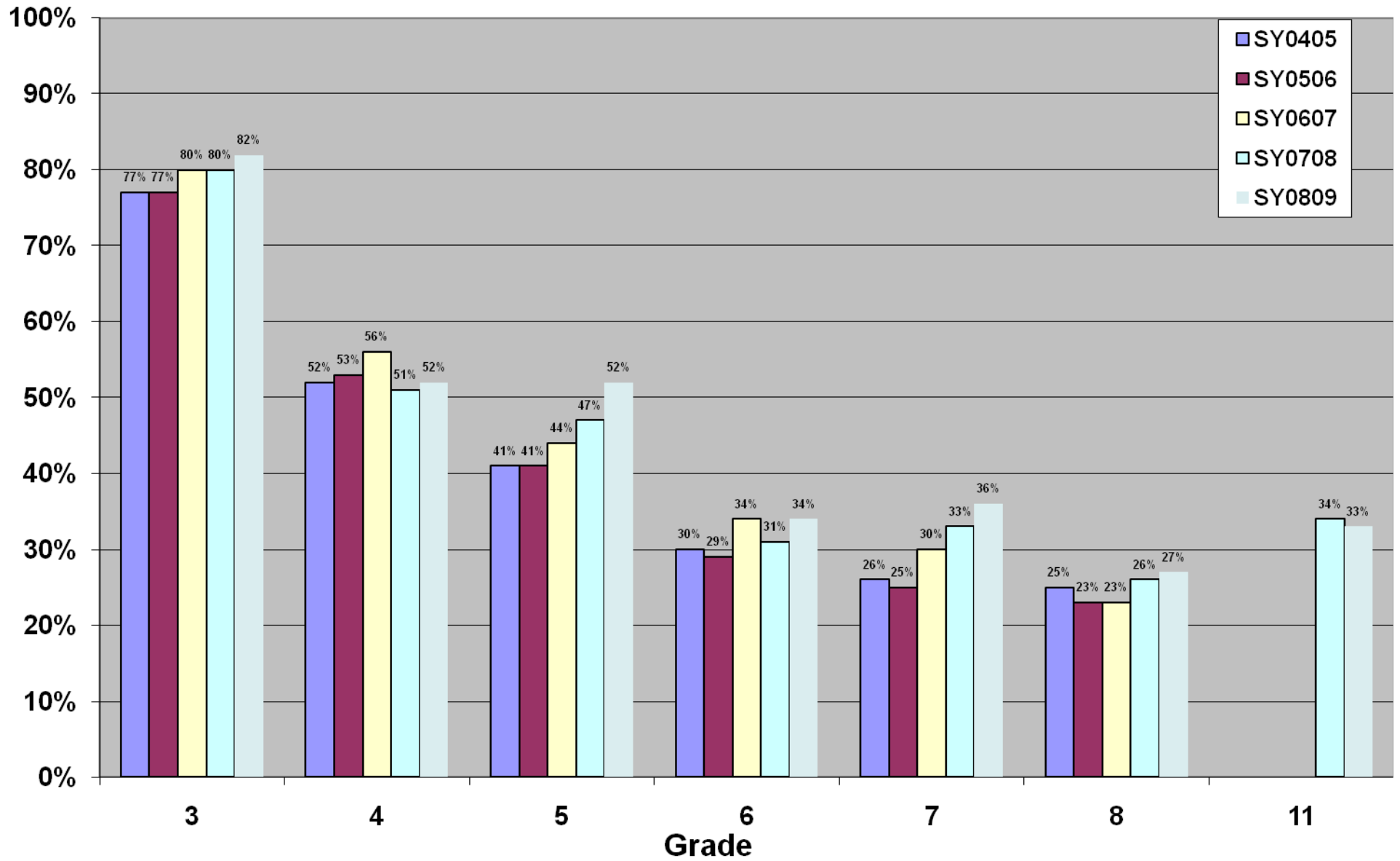
Parental  
and  
Public  
Support  
(Chs. 6, 7)



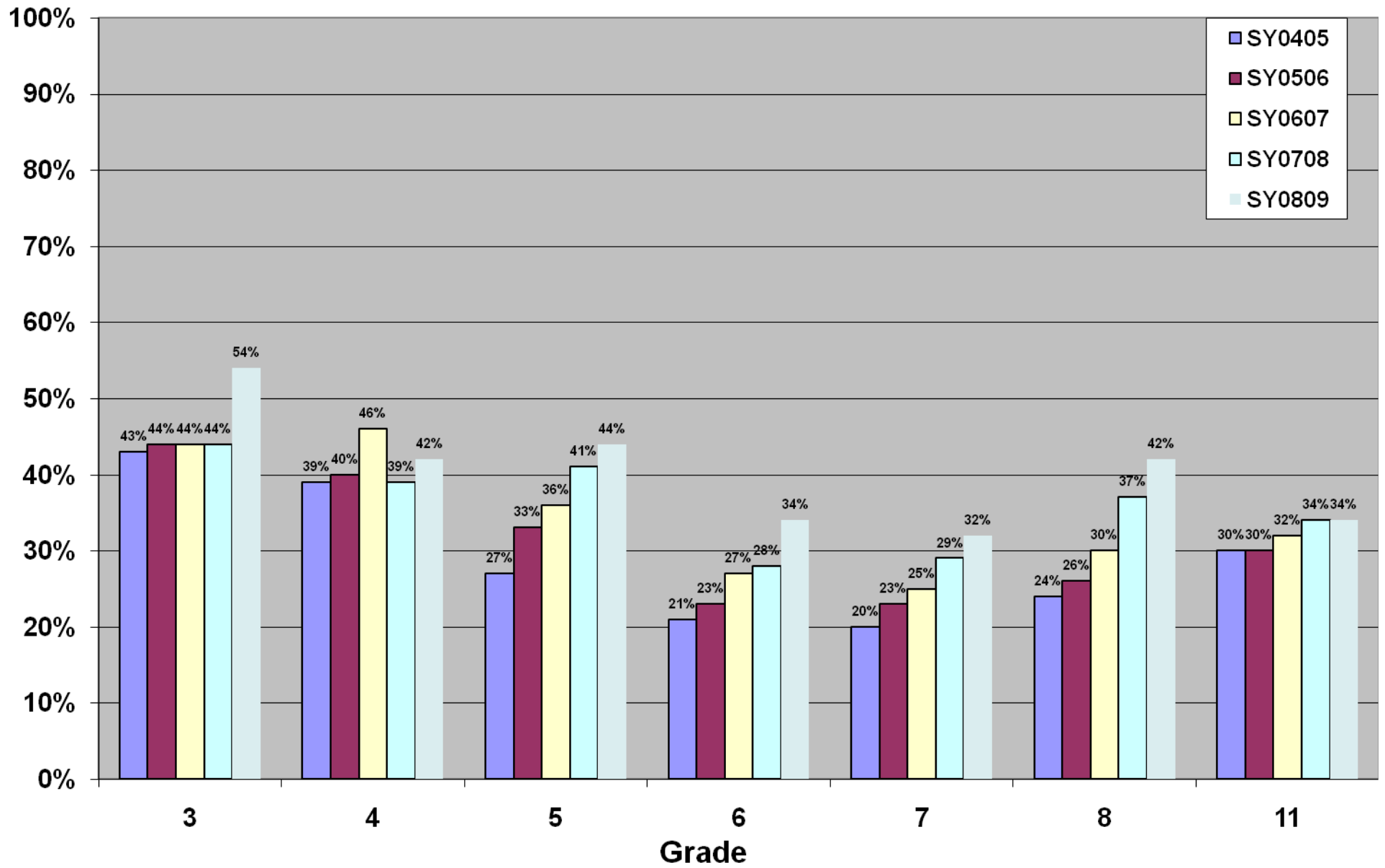
Government  
and  
Business  
Partners  
(Chs. 6, 7)

Engineering, Math and Science Community Contributions (Ch.5)

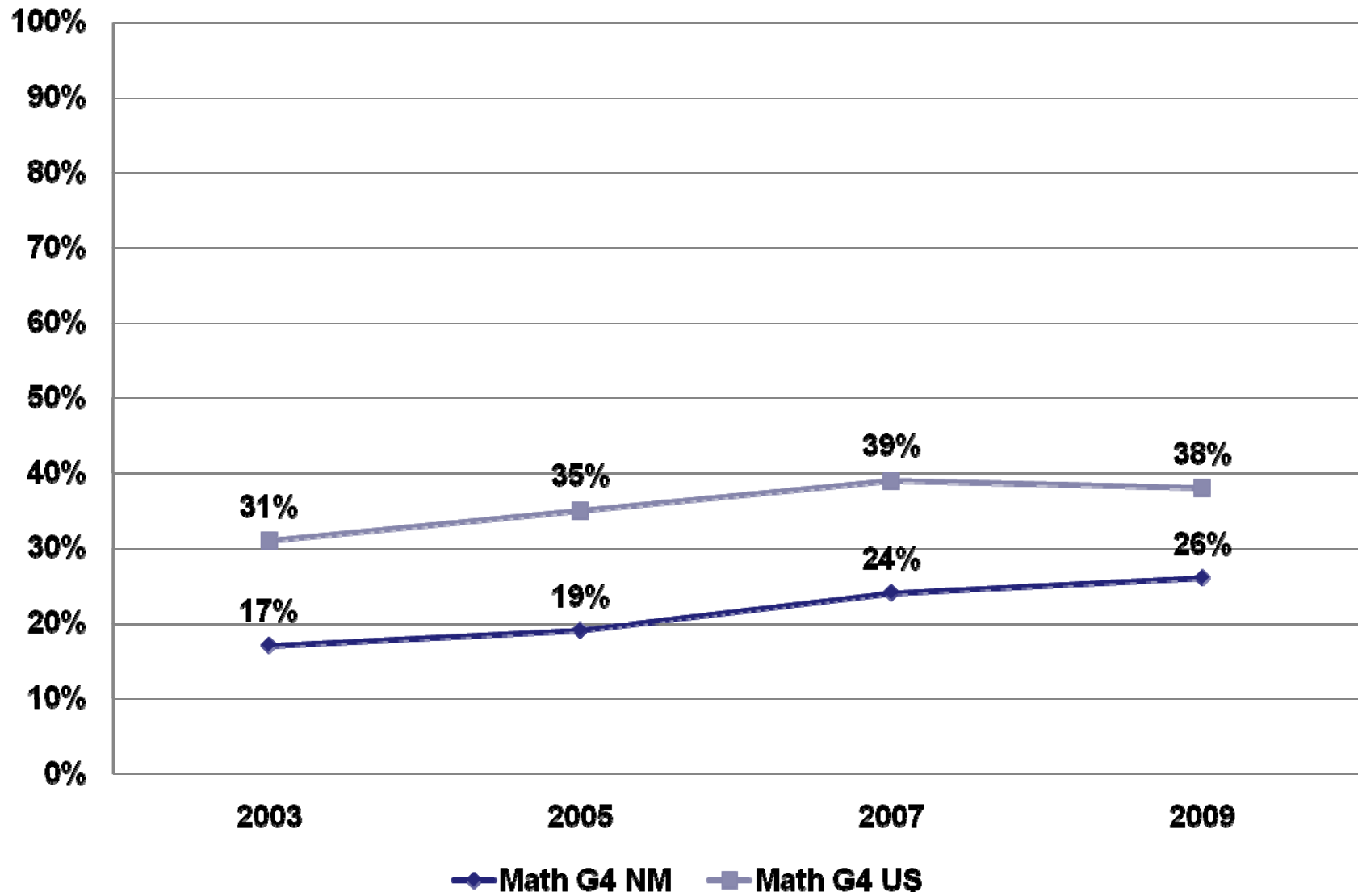
# % At or Above Proficient NMSBA Science



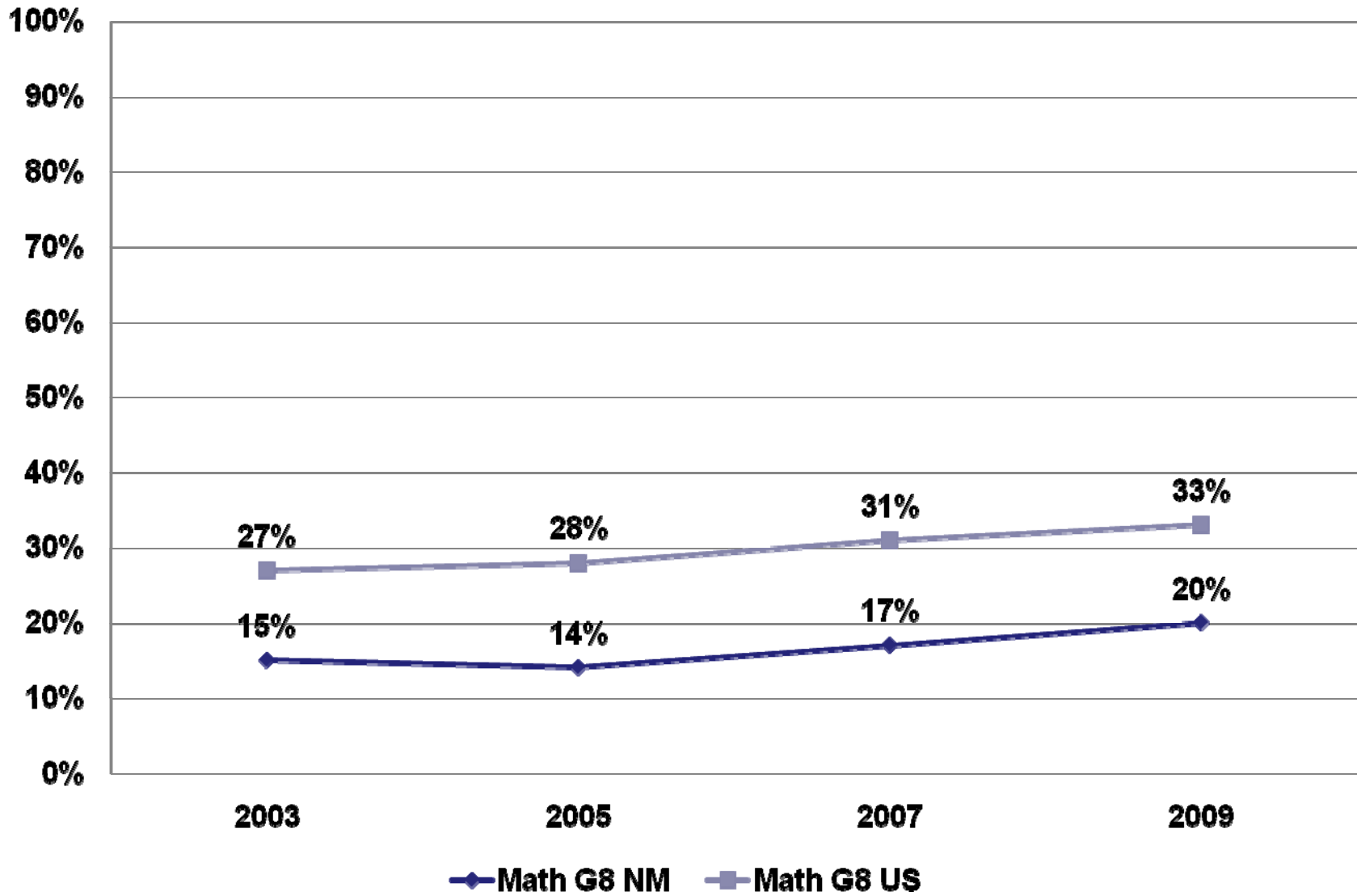
### % At or Above Proficient NMSBA Math



## NAEP Grade 4 Proficient or Above Math Results



## NAEP Grade 8 Proficient or Above Math Results



# On-going Refinement of the SBAs

- **New vendor (Measured Progress)**
- **Anchor pulling, item & data review**
- **Invitations sent to Sups & DTCs**
- **Copied to NMCTM & NMSTA lists**
- **[www.ped.state.nm.us/AssessmentAccountability/AssessmentEvaluation/index.html](http://www.ped.state.nm.us/AssessmentAccountability/AssessmentEvaluation/index.html)**

# 4 Math Courses...

- Pre-Algebra can “count” if it is part of student’s Next Step Plan which shows how they will complete 4 credits, one of which is Algebra 2 or higher
- Intervention courses do not “count” towards required 4 credits

# 4 Math Courses...

- Revising math courses listed in STARS
  - Standards-based descriptions
  - Simplification to help ensure schools use appropriate course codes consistently
  - Indication of which are at/above Algebra 2 level

# 4 Math Courses

- “Opt-out” of Algebra 2 rule and guidance is under development by PED
  - “Wimba” session to discuss proposed language for rule and guidance to districts—next 2 weeks?
  - Notice of public hearing of proposed rule—late November?
  - Rule in place early 2010
  - Backlash!!

# Dual Credit in Math & Science: Preliminary Enrollment Data '08-09

<b>Total enrollments</b>	<b>21,774</b>
<b>Total Math &amp; Science</b>	<b>3042 (14%)</b>
<b>Mathematics</b>	<b>1280 (6%)</b>
College Algebra	421 (33%)
Interm Algebra	339 (26%)
<b>Biology</b>	<b>842 (4%)</b>
<b>Chemistry</b>	<b>667 (3%)</b>
<b>Physics</b>	<b>141 (1%)</b>
<b>Astronomy</b>	<b>65 (&lt;1%)</b>
<b>Geology</b>	<b>47 (&lt;1%)</b>

# Intermediate Algebra as Dual Credit

<b>Total enrollment</b>	<b>260 (339 got college credit)</b>
<b>Algebra II</b>	<b>85 (33%)</b>
<b>Algebra III</b>	<b>47 (18%)</b>
<b>Alg II/Trig</b>	<b>42 (16%)</b>
<b>Math</b>	<b>16 (6%)</b>
<b>Math Analysis</b>	<b>15 (6%)</b>
<b>Trig</b>	<b>13 (5%)</b>
<b>Trig/Math Analysis</b>	<b>12 (5%)</b>
<b>Pre-Calculus</b>	<b>10 (4%)</b>

# Intermediate Algebra as Dual Credit

Num Thry-AlgII level 6 (WNMU Alg)

Geometry 5

Trgi/Ana Geom 2

AP Calc AB 2

Consumer Math 1

Prin Alg&Geom 1 (Principles Algebra &)

Algebra I-Part1 1 (CNM - Math 1210 - Prob Solv  
Methods)

Pre-Alg II 1

Linear Algebra 1 (Pre-AP Geometry)

# Common Core State Standards Initiative: Background

- Led by governors and chief state school officers in 51 states and territories
- Coordinated by
  - National Governor’s Association (NGA) & Council of Chief State School Officers (CCSSO)
- Assisted by
  - College Board, ACT, Achieve

# Common Core State Standards Initiative: Principles

- **Fewer, clearer, and higher**, to drive effective policy and practice
- Aligned with college and work expectations so that all students are prepared for success upon graduation
- Inclusive of rigorous content and applications of knowledge through higher-order skills
- Internationally benchmarked
- Research and evidence-based

# **Common Core State Math Standards College & Career Readiness**

**3 interconnected parts**

- Standards for Mathematical Practice
- 10 Standards for Mathematical Content
- Set of Example Tasks

# **Mathematical Practice Standard:** ways proficient students approach math

- Attend to precision
- Justify reasoning
- Make sense
- Persevere
- Look for structure
- Express regularity
- Use of technological tools

# Mathematical Content Standards

1. Number
2. Quantity
3. Expressions
4. Equations
5. Functions
6. Modeling
7. Shape
8. Coordinates
9. Probability
10. Statistics

# Crosswalk

NM 9-12 Math Standards

Common Core Standards

Process Standards

Problem Solving, Reasoning & Proof,  
Representation, Communication, Connections

*Mathematical Practice*

Algebra, Functions and Graphs

*Number, Quantity,  
Expressions, Equations,  
Functions*

Geometry and Trigonometry

*Modeling, Shape,  
Coordinates*

Data Analysis and Probability

*Probability, Statistics*

# Details on 1 Math Content Standard: Quantity

## Core Concepts

- The value of a quantity is not specified unless the units are named or understood from the context
- Quantities can be added and subtracted only when they are of the same type (length, area, speed, etc.)
- Quantities can be multiplied or divided to create new types of quantities, called derived quantities.

# Details on 1 Math Content Standard: Quantity

## Core Skills

- Know when and how to convert units in computations
- Use and interpret quantities and units correctly in algebraic formulas
- Use and interpret quantities and units correctly in graphs and data displays
- Use units as a way to understand problems and to guide the solution of multi-step problems

# **Race to the Top (R2T, RttT)**

- **Competitive grants to States (\$4.35B)**
- **50% directly to districts**
- **RFP in late Fall**
- **Implement ambitious plans in 4 education reform areas:**
  1. **Standards & assessments**
  2. **Data systems to support instruction**
  3. **Great teachers & leaders**
  4. **Turning around struggling schools**
- **STEM is a “competitive priority” (NM2012)**

# **College & Career Ready Policy Institute (CCRPI)**

- **8 states focused on graduating *all* students ready for college and careers.**
- **Partner organizations:**
  - **Achieve**
  - **Education Counsel**
  - **Jobs for the Future**
  - **Data Quality Campaign**
  - **National Governors Association**
- **Funded by the Bill & Melinda Gates Foundation**
- **Goal: Create College and Career Ready Action Plan for New Mexico by December 2009; Present Action Plan to Policy Makers Winter 2010**

# College & Career Ready Policy Institute (CCRPI)

- 10 Leadership Team Members representing
  - Public Education Dept; Higher Education Dept; Dept of Workforce Solutions, Governor’s Office, Lt. Governor’s Office, Legislative Education Study Committee, Office of Education Accountability, and NM Business Roundtable
- 35 State Team and Workgroup Members representing
  - State agencies, Districts, Higher Education Institutions, Community, Industry, and Business

## New Mexico's CCRPI Vision and Mission:

- **To ensure all New Mexico's students graduate from high school with a meaningful diploma that signifies they are ready for their next step in life.**
- Half of recent high school grads take remediation courses upon entering college.
  - Only about 30% of new NM 9<sup>th</sup> graders are academically “ready for high school”
  - Less according to the *Forgotten Middle*.)
- Concrete policy steps are identified to improve odds that students can pursue their own dreams.

# **Supports and Interventions for Districts and Schools** – Upcoming Priority in NM

- CCRPI seeks to establish and ensure a range of differentiated supports and interventions from the state to support all schools and districts.

## **Early Warning Systems, Pathways, Options & Models** – Upcoming Priority in NM

- Electronic Student Management System (ESMS)
- Carve Your Path
- Credit Recovery & Dual Credit

[www.ped.state.nm.us/sec.of.ed/DrCrossMaple.html](http://www.ped.state.nm.us/sec.of.ed/DrCrossMaple.html)  
and click on CCRPI

# Aligning Curricula to Standards

- Required by legislation passed in 2008
- K-8 Math due August, 2008
  - Approximately 70 districts received
- K-12 Science due August, 2009
  - Approximately 10 districts received
- 9-12 Math due January, 2010