

Straightening the Pipeline: Mathematics Alignment Work in Arizona

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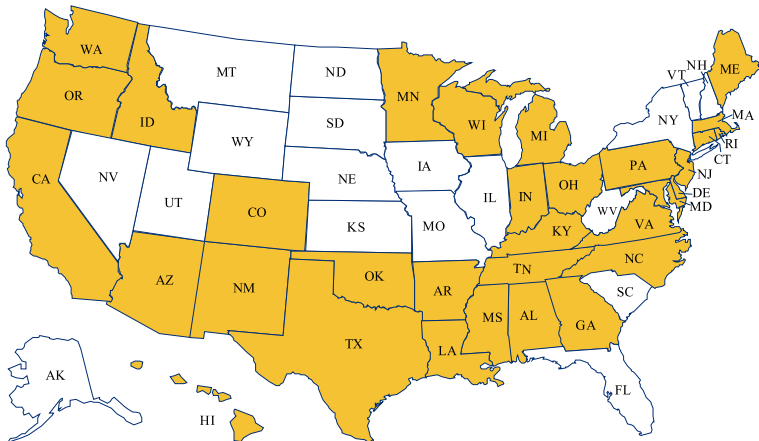
Institute for Mathematics and Education
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Achieve's ADP Network

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ADP Network Policy Agenda

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- Align high school standards with the demands of college and work.
- Require students to take a college- and work-ready curriculum to earn a high school diploma.
- Build college-and work-ready measures into statewide high school assessment systems.
- Hold high schools and postsecondary institutions accountable for student preparation and success.

Alignment work

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- Starting spring 2007, Alignment Institute compares Arizona mathematics standards with Achieve ADP benchmarks, and ADE starts standards revision. Goals:
 - Fill gaps
 - Define a college and work readiness standard
 - Ensure standard is rigorous, coherent, focused, specific, clear, and measurable.
- In October Achieve finds proposed standards are
 - “intellectually demanding and well-aligned with ADP Benchmarks”
 - “exhibit the criteria of high quality standards”
 - “in some areas exceed the level of rigor defined in the ADP Benchmarks.”
- In February, 2008, public draft of revised standards presented for comment, after extensive process with involvement of K–12 and higher education faculty.

Alignment Institute Members

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- Karen Nicodemus (Team Leader), State Board of Education
- Cheryl Lebo, Arizona Department of Education
- Mary Knuck, Arizona Department of Education
- Carlos Castillo-Chavez, Arizona State University
- Janet McShane, Northern Arizona University
- William McCallum, University of Arizona
- Rebecca McGraw, University of Arizona
- Jeff Thies, Central Arizona College

Achieve Algebra II test

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- Nine states developed end-of-course exam in Algebra II
- Test content aligned with ADP math benchmarks
- Purposes:
 - Ensure consistent content and rigor in Algebra II courses within and among states
 - Provide for comparisons in performance among the states
 - Possibly serve for postsecondary placement
- Test will be administered in Spring 2008
- Other end-of-course tests are in the works

Making Sense of Testing in Arizona

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- In October, 2007, the Institute for Mathematics and Education held a policy retreat at the Westward Look with representatives from Governor's office, ADE, state universities and community colleges, College Board, Achieve, International Baccalaureate, and University of Maryland Center for Mathematics and Education.
- Five questions:
 - 1 What do teachers need to know to teach a fourth year of mathematics?
 - 2 How does the fourth year affect recruitment and retention of teachers?
 - 3 What is the correlation between tests student take?
 - 4 Can Arizona institutions of higher education agree on a common placement test?
 - 5 What advanced placement credit is appropriate for IB students?

Straightening the pipeline at 12–13 transition

- Students diverted from technical majors because of the shock of the math placement test in college.
- Need an earlier assessment.
- Buy-in from both K–12 and college faculty is vital.
- IM&E is starting a study to provide policy makers and K–12 and college faculty and administrators with data.
- Give Achieve Algebra II test to incoming freshman at UA, ASU, NAU, community colleges.
- Careful statistical study of correlation between Algebra II, AIMS, SAT, ACT, IB, high school grades, and university placement tests.
- Achieve very interested in this project, could have national significance.