

State of Maine MATH-IN-CTE INITIATIVE

Problems to Address:

- Poor high school NAEP math scores
- American students rank 25th in math out of 30 industrialized nations (PISA 2006 Math Results)
- Over 50% Maine community college students take remedial math (Feb. 2008 Maine Dept. of Education, University System, Community College Report)
- Students challenged to meet math requirements of 21st-century industry

Solution: Implement the NRCCTE Math-in-CTE Model

- Partner math and career and technical education (CTE) teachers to enhance CTE curriculum with math
- Provide CTE teachers and their math partners with 10 days of professional development in the Math-in-CTE model
- Map the curriculum
- Prepare CTE lesson plans with enhanced math content
- Deliver lessons to CTE students

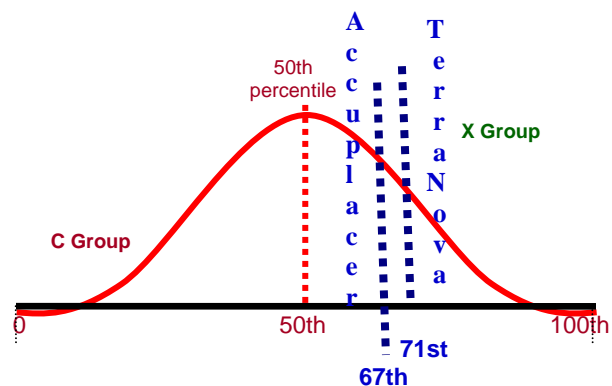
Results, National Research Center for CTE (NRCCTE) Study*:

- After one year exposure to math-enhanced lessons, CTE students in experimental classrooms performed significantly better on TerraNova and Accuplacer, two of three math post tests administered
- Average TerraNova and Accuplacer experimental class scores at 71st percentile and 67th percentile, respectively, of average control-group class (see below graph)
- Increased confidence of CTE teachers in reinforcing math included within the technical program
- In a follow-up study, 66% of math teachers reported using methods and materials developed in the original study

* Stone, J.R., Alfred, C., Pearson, D., Lewis, M. V., & Jensen, S. (2006). *Building academic skills in context: Testing the value of enhanced math learning in career and technical education*. University of Minnesota: National Research Center for Career and Technical Education. www.nrccte.org

NEXT STEPS:

- Expand upon Math-in-CTE model in Maine
- Include CTE-math teacher partner teams (Each team must include one of each!)
- Current CTE program areas for second year of state implementation (2011-2012):
Automotive Technology & Culinary Arts
- Ready to expand to pilot for local level regional trainings for 2012-2013!



- ❖ **Support to be provided to pilot schools in 2012-2013:** Highly skilled trainers to oversee teacher professional development events; pre and post Accuplacer mathematics tests for all CTE students.
- ❖ **Support required from schools:** Commitment of all CTE teachers and their local middle/high school mathematics teacher partners to 10 days of professional development and ongoing collaboration; costs and logistics for local professional development events; implementation of DOE-paid pre and post student Accuplacer mathematics tests.

Now Recruiting CTE schools and partner middle/high schools to be considered for 2012-2013 local pilot!

Please contact: Doug Robertson, Maine Dept. of Education, Email: doug.robertson@maine.gov,
Phone: (207) 624-6744 AND see “**Math-in-CTE**” link at www.schoolswork.org