

# **Developing Algebra II Skills through Career and Technical Education: Part 2**

SBCTC  
Cascade A Room, 4<sup>th</sup> Floor  
1300 Quince St, Olympia, WA  
December 3-4, 2009

## MEETING GOALS:

- Develop a course outline proposal and one prototype module of instructional materials that could be used in a CTE-oriented math course emphasizing core algebra II standards
- Define a process for completing the development of a CTE-oriented math course for Washington state addressing advanced algebra content/skills

## **Thursday, December 3**

- 1:00-1:30**      *Welcome, Introductions, and Context-Setting*
- 1:30-2:30**      *Revisiting and Reconfirming agreements from August meeting*
- 2:30-3:00**      *Break*
- 3:00-4:00**      *Reviewing relevant national resources/materials*
- 4:00-5:30**      *Targeting core standards; what are the “big ideas” for all students?*
- 5:30-7:00**      *Defining a format for a prototype instructional module*
- 7:00**            *Dinner on your own*

## **Friday, December 4**

- 8:30-11:30**      *Developing an instructional module*
- 11:30-12:30**      *Working lunch*
- 12:30-2:00**      *Recommending a process and timeline for finishing the work*
- 2:00**            *Adjourn; Thanks and have a safe trip home!*

**CTE-Math Meeting Notes: Outcomes<sup>1</sup>  
August 12-14, 2009**

**Participants:** Cris Bell (Clark County Skills Center), Greta Borneman (OSPI), Marilyn Bridgan (Clover Park SD), Susan Canaga (Issaquah SD), Kathleen Church (Mukilteo SD), Paul Clement (Bellingham SD), Linda Drake (Pierce County Careers Connections), Leonard Edlund (Bethel SD), Sue Feldman (observer), Christi Harter (Spokane SD), Coretta Hoffman (Moses Lake), Jo Jacobsen (Pierce County Careers Connections), Greg Johnson (South Kitsap SD), Nan Johnson (Seattle Public Schools), Susan Kidd (SBCTC), Tim Knue (observer: WA ACTE), Andrea Levy (Seattle Central CC), Kris Lindeblad (facilitator), Stu McCurdy (Yakima SD), Dennis Milliken (OSPI), Bill Moore (SBCTC), Connie Nelson (Shelton SD), Steve Sears (Vashon SD), Jennifer Styer (Bellingham SD), Kathe Taylor (SBE), Bonnie Tidwell (Seattle Public Schools), Sabrina Underwood (Oak Harbor SD), Amanda Verdugo (North Mason SD), Andy Wesley (Oak Harbor SD)

<b>Math</b>	<b>CTE</b>
Cris Bell	Susan Canaga
Greta Borneman	Linda Drake
Marilyn Bridgan	Leonard Edlund
Kathleen Church	Christi Harter
Paul Clement	Jo Jacobson
Coretta Hoffman	Nan Johnson
Greg Johnson	Tim Knue
Susan Kidd	Stu McCurdy
Andrea Levy	Dennis Milliken
Connie Nelson	Jennifer Styer
Steve Sears	Bonnie Tidwell
Amanda Verdugo	Sabrina Underwood
Andy Wesley	

The State Board of Education, Transition Math Project, and Office of Superintendent of Public Instruction co-sponsored a meeting of invited participants to begin exploring the idea of a math course that would consider the intersections of Algebra II and Career and Technical Education.

The group, which will meet again in early November to go deeper into the work, produced the following statement of purpose. (Detailed notes of the three-day process that led to the development of this statement are contained in a separate, companion document.)

---

<sup>1</sup> See separate, companion document for detailed process notes.

## **Algebra II Applications: Initial Statement of Purpose**<sup>2</sup>

This document was prepared by math and career and technical education professionals invited to a special meeting convened by the State Board of Education, Transition Math Project, and Office of State Superintendent of Public Instruction. The meeting was held August 12-14, 2009.

- ▶ We believe that it is possible to create at least one math course in a CTE context that will meet the needs of current legislation for a third year math course.
- ▶ We will seek approval for this course(s) through the State Board of Education so that completion of the course(s) automatically meets the graduation requirement.
- ▶ This course(es) should be made available statewide to districts without precluding existing successful programs.
- ▶ We believe that this group can create this course given access to appropriate resources.
- ▶ We believe that many stakeholders need to be brought into the process (teachers, community members, administrators, industry leaders, economic development council members )
- ▶ We believe that this course could be piloted in September of 2010 with support from the State Board of Education. We would recommend that 6-8 teachers pilot the course(s) and give input on effectiveness of differing implementation methods. Full implementation would be intended to serve the needs of the Class of 2013.
- ▶ We recognize that in order to pilot this course(s), it would need to be in draft form by May 2010. This would allow professional development to occur on the summer of 2010.

### **Possible Name for this class:**

- ▶ A possible course title is *Algebra II Applications*. We believe that inclusion of “Algebra II” is important in the title to be clear in the purpose of the course to districts and post secondary institutions.
- ▶ *Algebra II Applications* would ultimately provide students sufficient math to enter a trade school, apprenticeship program, two year college or 4 year baccalaureate program. We will initially examine those Algebra II standards that lend themselves easily to applications.

### **Intended Audience for this class:**

- ▶ Students who have completed Algebra I or Integrated Math I and Geometry or Integrated Math II.
- ▶ Students who prefer a context driven math curriculum.
- ▶ Students who enjoy creating mathematically based products or completing mathematically based projects.
- ▶ Students whose career interests require this type of mathematical reasoning.

### **Our foundational resources will include:**

---

<sup>2</sup> For additional information, please contact Kathe Taylor (SBE) at [kathe.taylor@k12.wa.us](mailto:kathe.taylor@k12.wa.us); Bill Moore (SBCTC) at [bmoore@sbctc.edu](mailto:bmoore@sbctc.edu); or Betty Klattenhoff (OSPI) at [betty.klattenhoff@k12.wa.us](mailto:betty.klattenhoff@k12.wa.us)

- ▶ Algebra II/ Integrated Math III Performance Expectations
- ▶ College Readiness Standards
- ▶ Career Clusters
- ▶ CTE leadership and employability standards

**Supporting resources we would like to examine more closely are:**

1. CORD materials
2. COMAP materials
3. IMP materials
4. Spokane Schools math program
5. Whatcom County TMP materials
6. Jo/Nan TMP materials – PC3 TMP Project materials
7. Construction Math Toolbox
8. McGraw Hill Applied Math (Canada)

**Some Concerns:**

- ▶ There must be significant ongoing professional development for all teachers involved.
- ▶ There must be structured opportunities for collaboration between CTE and math teachers. Virtual collaboration needs to be an option for teachers in small schools.
- ▶ There must be adequate resources provided for this course, including technological resources.
- ▶ We will need State Board of Education approval so that students need not use the appeal system to earn a third credit.
- ▶ We need to consider funding options.
- ▶ District needs/mandates regarding credits need to be addressed.
- ▶ We need to consider certification options for teachers and determine who will be qualified to teach this course.
- ▶ How and when will stakeholders outside of education be brought into the process?

## Algebra II Applications Module Unit Plan

<b>Unit Title</b>		
<b>Mathematics Frame</b>		
<b>CTE Frame</b>		
<b>Time Expectation</b>		
<b>Identify Desired Results</b>		
<b>Mathematics Understandings</b>	<b>Mathematics Essential Questions</b>	
<b>Concepts:</b> The students will know...	<b>Skills:</b> the students will be able to...	
<b>Standards Addressed</b>		
<b>CTE understandings</b>	<b>CTE Essential Questions</b>	
<b>Knowledge:</b> The students will know...	<b>Skills:</b> the students will be able to...	
<b>Standards Addressed</b>		

**Assessment Evidence:** quizzes, tests, interviews, essays, journals, products. etc.

Presenting Theme Problem:

**Formative Assessment:**

**Skills Assessment:**

**Necessary Prior Knowledge and Skills:**

**Scope and Sequence of Instructional Activities**

**Necessary Materials:**

**Printed Resources:**

**Supplies:**

**Electronic resources:**

**Other (speakers, field trips, etc.):**

## Comparison Tool for Module

<b>Module Sources</b>	<b>Positive Features</b>	<b>Features Needed</b>
CORD Module		
Dana Center Module		
UbD Module		
Project TIME Module		
