

# D230's Transition to Integrated Math

*December 1, 2014*

*Carl Sandburg High School PAC*

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*Mr. Tim Dalton, VJA Math/Business Chair*

*Mr. Craig Ebel, AAS Math/Business Chair*

*Mr. Mark Fertel, CS Math/Business Chair*

# Format for the Evening

- Introductions
- Information sharing
- Break
- Question/Answer Session

# Goals for the Evening

- To increase audience knowledge regarding the Integrated Math Model
- To review data supporting Integrated Math and its pathway to postsecondary options
- To explain the 8 Mathematical Practices
- To review D230's decision making process resulting in the recommendation to transition to Integrated Math
- To share anticipated programming for students

# What is Integrated Math?

A style of Math that *integrates* Algebra, Geometry, Number Quality, Functions, Statistics, and Probability

# Pathway Comparison

## Traditional

Algebra 1

Geometry

Adv. Algebra

## Integrated

Math 1

Math 2

Math 3

Statistics (AP), Computer Science (AP), Calculus AB (AP),  
Calculus BC (AP), MVCC, Additional 4th Year Math Course

# More about Integrated Math

- Popular in European Countries
- National Council for Teachers of Math (NCTM) suggested consideration
- College Board is changing to support Integrated Math
- Illinois State Board of Education (ISBE) supports Integrated Math
  - Offers supports
  - Alignment of standards

# Research

- Students in Integrated Math scored significantly higher than those in Traditional Math on standardized achievement tests (Tarr et. al).
- Students in Integrated Math scored better on the Tests of Common Objectives, Problem Solving, and Reasoning Test, and a standardized achievement test (Grouws et. al).
- “Integrated Math was shown to be at least as effective as subject specific instruction for all students and to be more effective when used with students from high needs settings” (Krupa).

# 8 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



# 8 Mathematical Practices and Common Core

- **Critical Thinkers**
- **Communicators**
- **Collaborators**
- **Creators/Creativity**

# Math Landscape

- Major shift in mathematics
  - 8 Mathematical Practices
  - Common Core
- Standardized assessments (PARCC and AP Tests) align with shift
- Competitive postsecondary options and careers

# Decision Making Process

- Given ISBE support, NCTM recommendations, and the realized shift in math, the Integrated Math Model deserved attention and investigation

# Decision Making Process

- Conferences
- Research
- Professional Development
- Site Visits
- Surveys
- Curriculum Advisory
- Education Committee

# Factors Considered

- Realized shift in Math
  - 8 Mathematical Practices
  - Common Core
  - Standardized Assessments
- Research
- ISBE and NCTM Recommendations
- Survey results

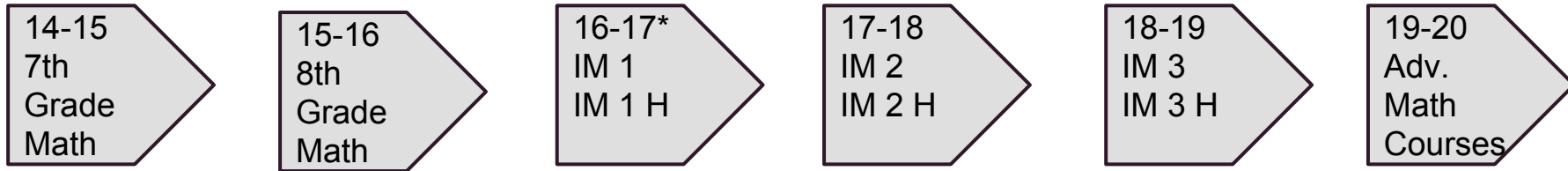
# Decision

Transition to Integrated Math for the 2016-2017 School Year was recommended

# Where are we now?

- Dedicated to ensure a pathway for all our students to be successful in postsecondary college and career readiness skills
- Dedicated to ensure and expand pathways to AP and Advanced courses offered in D230
- Continued collaborations with our partner schools

# Where are we going?



\*Some students may be placed directly into Geometry or Geometry Honors when entering freshman year. In that situation, the Traditional Model will be followed



# Next Steps

- **Develop and expand resources**
  - Website supports
  - FAQ's
  - Community and parent outreach opportunities
- **Continued collaboration with partner schools**
- **Extensive professional staff development**

# Break

Please write down any questions you might have and hand them to D230 staff.

Enjoy a short 10 minute break.

Please return in 10 minutes for the Question/Answer session.

# Questions/Answers

Mr. Tim Dalton, VJA Math/Business Chair

Mr. Craig Ebel, AAS Math/Business Chair

Mr. Mark Fertel, CS Math/Business Chair

# Resources

Grouws, D., Tarr, J., Chavez, O., Sears, R., Soria, V., & Taylan, R. (2013). Curriculum and Implementation Effects on High School Students' Mathematics Learning From Curricula Representing Subject-Specific and Integrated Content Organizations. *Journal for Research in Mathematics Education*, 44(2), 416-463.

Krupa, E. (2011). *Evaluating the Impact of Professional Development and Curricular Implementation on Student Mathematics Achievement: A Mixed Methods Study*. Raleigh, North Carolina: North Carolina State University.

Tarr, J., Grouws, D., Chavez, O., & Soria, V. (2013). The Effects of Content Organization and Curriculum Implementation on Students' Mathematics Learning in Second-Year High School Courses. *Journal for Research in Mathematics Education*, 44(4), 683-729.