

**9-12 Integrated Mathematics Courses
Council Bluffs Community School District
Frequently Asked Questions**

1. How does the new mathematics curriculum compare to the program we currently have?

At the high school level, topics in mathematics are usually separated so that one year a student focuses entirely on algebra, the next year on geometry, and then another year of algebra. Last year, the high school teachers on the curriculum revision team decided that we should move from this traditional sequence to an integrated approach. This means that each math course a student takes would include instruction in a variety of topics in algebra, statistics and probability, geometry, and discrete mathematics. This change will result in students receiving more algebra each year to better prepare students for success in college, in careers, and in daily life. This approach to presenting mathematics is supported by the Common Core Standards that have been adopted by Iowa as it helps students to understand the body of knowledge they should learn in each category each year.

2. How was the decision made to move to an integrated approach to mathematics?

During the 2009-2010 school year, a team of high school math teachers reviewed state and national standards, district data, and best practice in mathematics instruction. The team then collected data from their colleagues about the potential to write an integrated curriculum. All high school teachers teaching in the district were consulted and the team recommended the district move forward with integrated curriculum.

3. How will the new curriculum be implemented?

During the 2011-2012 school year, the District will start implementing Integrated I, which replaces Algebra, in 2012-13 we will implement Integrated II, which replaces Geometry, and in 2013-12 we will implement Integrated III, which replaces Algebra II.

4. Will the students taking integrated courses be successful in college?

The first three courses in the series provide a significant core of broadly useful mathematics for all students. They were developed to prepare students for success in college, in careers, and in daily life in contemporary society. After the successful completion of course III, students have to opportunity to enroll in Trig/PreCalculus, Statistics, or Discrete mathematics along with the potential to take Calculus prior to college.

“On a mathematics department placement test used at a major Midwestern university, students who had taken Integrated Math performed as well as students in traditional pre-calculus courses on basic algebra and advanced algebra sub-tests, and they performed better on the calculus readiness sub-test.”

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5. How will my student benefit from the new curriculum?

According to the research, a well-articulated integrated curriculum challenges students to learn increasingly more sophisticated mathematical ideas. Mathematical thinking and reasoning skills, including making conjectures and developing sound deductive arguments, are important because they serve as a basis for developing new insights and promoting further study. This curriculum expects students to analyze data throughout their high school career in order to become more knowledgeable, analytical, thoughtful consumers of the information and data generated by others.

6. Will Integrated math units be accepted by Universities?

The district has obtained confirmation from Iowa State University, University of Iowa, Drake University, the University of Nebraska-Omaha and Iowa Western Community College that integrated course I, II, and III is accepted as the minimum high school course requirements for admission. These confirmations are on file at the district office in the Curriculum and Instruction Department.

7. Are there other districts using an integrated approach?

Many districts throughout Iowa have adopted an integrated math curriculum. Marion Independent High School, Malcom Price Lab School in Cedar Falls, IA, East Union High School, and Mount Pleasant. Another Omaha-area school is also in the initial stages of developing an integrated curriculum.

8. What concepts are taught in each course?

Course I - ALGEBRA -Patterns of Change, Linear Equations, Exponential Functions, Quadratic functions

GEOMETRY - Vertex-Edge Graphs, Patterns in Shapes

STATISTICS - Patterns in Data, Chance

Course II - ALGEBRA- Functions, Equations, Systems, Matrices, Regression, Nonlinear equations

GEOMETRY- Coordinate Geometry, Network Optimization, Trigonometry

STATISTICS - Probability Distribution

Course III - ALGEBRA - Linear Programming, Polynomial functions, Inverse functions

GEOMETRY - Reasoning and Proof, Similarity and Congruence, Circles

STATISTICS - Samples and Variation

9. How will my child's math classroom look different?

The district curriculum has also addressed the mathematical practices of the Common Core Standards. A classroom experience will allow students, in small groups or individually, to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut to solve a problem.