



Iowa City Community School District

MATHEMATICS EDUCATION SELF STUDY

November 2023

Carmen Gwenigale, Executive Director of Curriculum and Assessment

Eliza Proctor, Executive Director of Elementary Teaching and Learning

Lucas Ptacek, Executive Director of Secondary Teaching and Learning

Kate Degner, Secondary Mathematics Coordinator

Kelsey Feldmann, Elementary Math Area Resource Coordinator

Kristin Wendlandt, Elementary Math Area Resource Coordinator



**IOWA CITY COMMUNITY
SCHOOL DISTRICT**

All In for All Kids

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ICCSO CURRICULUM SELF-STUDY PROCESS

The Iowa City Community School District curriculum review process provides a systematic procedure to study existing curriculum areas and programs relative to internal and external standards as well as data from the curricular program.

Each year, at the district-wide level, a self-study committee is appointed for the areas under review for that particular school year. A curriculum review self-study committee has three primary tasks:

1. Review and affirm or modify the program's mission statement.
2. Analyze relevant data related to the program.
3. Use the data analysis to determine program strengths and limitations, and develop a recommended action plan based on that analysis.

External standards utilized extensively by the self-study committee include state and national curriculum standards such as the K-12 Iowa Core Standards in Mathematics and guidance from the National Council of Teachers of Mathematics. The Iowa City Community School District's Comprehensive Diversity, Equity, and Inclusion Plan was also used as an internal standard for the work of the team.

ICCSO MATHEMATICS SELF-STUDY COMMITTEE

44 people served on the mathematics self-study committee. Committee members included current ICCSD family members, community members, a member of the ICCSD Board of Directors, a professor from the University of Iowa Mathematics Education Department, elementary and secondary mathematics teachers, teachers and coordinators from ICCSD special education, library, ELL, and ELP programs, equity ambassadors, administrators from the central district office as well as the elementary, junior high, and senior high schools, and GWAEA mathematics consultants.

Applications to participate on the self-study team were sent to district staff and families in the Spring of 2022. The application process followed ICCSD School Board policy by including an item on the application that read: "According to board policy, 'to the extent possible, advisory committee membership shall have balanced representations with regard to race, color, national origin, sex, disability, religion, creed, age, marital status, sexual orientation, gender identity, and socioeconomic status.' Please provide any information relevant to these identifiers that you feel comfortable sharing."

The self-study committee met via Zoom on one occasion and in person on three separate occasions. Committee members were also given opportunities to provide feedback or ask questions outside of those meetings.

In addition to the tasks enumerated above, the self-study team analyzed and revised the survey questions that were used to gather input about the mathematics program.

ICCSO MATHEMATICS CURRICULUM REVIEW SURVEY

The Iowa City Community School District Mathematics survey asked families, district staff, and students in grades 3-12 for feedback on the Mathematics program. The survey was dual-purpose and also asked for feedback on the ICCSD health program in a separate section of the survey. The order participants completed the health and math sections was randomized, asking some participants about the mathematics program first, while asking others about the health program first. Participants had the option to skip questions in the survey.

The survey included the following topics regarding the ICCSD mathematics program:

- General Perceptions
- Instructional Time and Materials
- Cultural Responsiveness
- Standards of Mathematical Practice
- College and Career Readiness

The survey was open December 12 to January 9. Emailed invitations to complete the survey were sent to families and staff. Students in grades 3-12 completed the survey during class time. The link was anonymous and not tied to an individual. Respondents could choose to skip questions. A reminder to complete the survey was sent on January 5, 2022.

The survey was translated into Spanish, Swahili, Arabic, French.

Survey Participant Total - By Group			
	Total	Elementary	Secondary
Students	2,254	956	1298
Families	1,125	675	450
Staff	159	99	60

Student Participant Total - Self-Identified Race/Ethnicity

	Elementary	Secondary
American Indian or Alaska Native	5%	2%
Asian	4%	7%
Black	22%	18%
Hispanic or Latinx	7%	9%
Native Hawaiian or Other Pacific Islander	<1%	<1%
White	33%	56%
Prefer Not to Respond	29%	8%

Family Participant Total - Self-Identified Race/Ethnicity		
	Elementary	Secondary
American Indian or Alaska Native	<1%	<1%
Asian	11%	5%
Black	6%	5%
Hispanic or Latinx	5%	5%
Native Hawaiian or Other Pacific Islander	<1%	<1%
White	65%	67%
Prefer Not to Respond	12%	17%

ICCSO MATHEMATICS PROGRAM MISSION, BELIEF STATEMENTS AND GOALS

As a result of the curriculum review process, the self-study team reviewed the mission statement, vision, and belief statements for mathematics education and adopted the following.

MISSION STATEMENT

The ICCSD Mathematics program exists to ensure all students are actively engaged in rigorous grade-level mathematics, have access to effective teaching and learning with high expectations, and are supported to maximize their potential.

VISION

All students will see themselves as confident, life-long learners who are able to reason mathematically and make sense of problems in authentic contexts, empowering them to pursue limitless opportunities.

BELIEF STATEMENTS

WE BELIEVE:

All students, at every grade level and in every course,

- can achieve a high level of understanding.
- have the innate ability to think mathematically.
- have the capacity to grow their mathematical understanding through rigorous experiences.
- are capable of making sense of challenging mathematics.

Math

- is the study of patterns and connections.
- is a beautiful and meaningful way to describe the world, with connections to many disciplines.
- can be accurately represented in a variety of ways.

Math Instruction

- should be engaging, purposeful, rigorous, accessible, culturally responsive, and encourage risk-taking.
- supports students thinking collaboratively through meaningful mathematical discourse.
- is based on high expectations (grade-level standards) and ample support to ensure all students achieve.
- develops procedural fluency by building on a foundation of conceptual understanding, strategic reasoning, and problem-solving.
- best addresses the Iowa Core Mathematics Standards as connected and coherent concepts.
- embraces productive struggle and recognizes mistakes as essential parts of the natural learning process.

leverages relationships, students' culture, experiences, and language to support and enhance mathematics learning.

ACADEMIC ACHIEVEMENT GOALS

The following academic achievement goals have been set by the ICCSD Board of Directors:

- Students will, over time, independently solve increasingly complex mathematical problems.
- On average, achievement will be as high as or higher than previous years for the same grade groups.
- On average, achievement will increase at a rate equal to or greater than the national average for cohort groups.
- On average, achievement gaps between subgroups will decrease from previous years.

The following goal was set by the Five Year District Strategic Plan:

By June 2027, at least 75% of students will score proficient or advanced on ISASP (Spring 2022 proficiency 67%).

ICCSB MATHEMATICS PROGRAM STRENGTHS

The following information was generated from a review and analysis of data gathered from surveys as well as academic achievement data, namely historical Iowa Statewide Assessment of Student Progress and FAST data. Those responding to surveys included elementary and secondary teachers, students, administrators, and families.

Strengths

- Most teachers believe that building relationships with students has a positive impact on student achievement.
- Many students report teachers encourage multiple approaches to solving problems.
- Standards-aligned math intervention materials available in all elementary buildings.
- Majority of students affirm math is not about solving problems quickly and only getting the right answer.
- Overall proficiency rates (based on ISASP) are slightly above the state average.
 - Elementary, 3rd - 6th Grade = 65.5% proficient
 - Junior High, 7th-8th Grade = 65.7% proficient
 - High School, 9th - 12th Grade = 65.5% proficient
- Many students report they believe they can get better at math and feel their math teachers believe in them.
- Universal screening is conducted three times a year for grades K - 8 (Fastbridge earlyMath & aMath).
- All students have access to grade-level instruction in grades 6 - 12.
- Majority of families report their student(s) talk positively about math at home.
- Families, students, and teachers report that students are engaged in learning through evidence-based best practices such as the use of models, charts, and representations.
- Students report skilled teachers are the most influential element in the mathematics classroom. Teachers report they are most successful when they build strong relationships, make learning meaningful and fun, and are attuned to individual student needs and successes.

ICCSd MATHEMATICS EDUCATION PROGRAM IMPROVEMENT PLAN

Academic Achievement

Limitation	Recommendations and Strategies	Person(s) Responsible	Target Date
Significant disparities in proficiency between subgroups. Core instruction currently results in less than 80% of students demonstrating grade level mathematics proficiency based on ISASP (3rd-12th grade) and Fastbridge (K-8).	More collaboration time and professional learning around culturally relevant math teaching, the 8 effective math teaching practices identified by NCTM, math pedagogy, and high leverage instructional strategies. HRS Level 2	Elementary & Secondary Math Coordinators	23-24 school year and ongoing
	Prioritize standards in order to provide clarity and cohesion around the essential content. HRS Level 3	Elementary & Secondary Math Coordinators, teacher teams, and elementary IDS	Finalize Spring 2023, implement 23-24 school year
	PLCs as a means of intentional unit study, planning, and reflection HRS Levels 1, 2, 3	Elementary & Secondary Math Coordinators, building teacher teams, building administrators & IDS	23-24 school year and ongoing
	Utilize the full potential of MTSS and supports - Build efficacy and capacity around effective math teaching practices in core instruction - Continued refinement of Tier II and Tier III interventions HRS Level 2, 3	Elementary & Secondary Math Coordinators, building teacher teams, building administrators & IDS	23-24 school year and ongoing
	Inform building leadership how to recognize and support consistent best practices in mathematics instruction. HRS Levels 1, 2	Elementary & Secondary Math Coordinators	23-24 school year and ongoing
	Implementation of co-teaching model when appropriate (Special Education, ELL, ELP) in classrooms supported through: - Employ research-based model	Special Education Department, Elementary & Secondary Math Coordinators, building administrators, and	23-24 school year and ongoing

	- Training - Observer successful examples - Coaching & collaboration - Building schedules HRS Level 2	teachers	
	Utilize <i>ICCSA Math Belief Statements</i> and <i>Portrait of a Staff Member</i> to guide decision-making around hiring practices. HRS Level 1, 2	Elementary & Secondary Math Coordinators, Human Resources, & building administrators	23-24 school year and ongoing
	Explore elementary math specialist models. HRS Levels 1, 2, 3	Elementary & Secondary Math Coordinators	24-25 school year and ongoing
	Highlight resources available for schools to share with families. HRS Levels 1	Elementary & Secondary Math Coordinators	23-24 school year and ongoing

Curriculum & Instructional Materials

Limitation	Recommendations and Strategies	Person(s) Responsible	Target Date
Limited practices that support culturally relevant math teaching	Implement curricular materials that embed culturally relevant teaching practices. HRS Levels 1, 2, 3	Director of Curriculum, Instruction, & Assessment, Elementary & Secondary Math Coordinators, teachers	24-25 school year
Insufficient support for students needing services outside of grade level content	Develop and consider adoption of secondary intervention materials & practices. Provide PD and guidance around “just in time” intervention. HRS Levels 2, 3	Director of Curriculum, Instruction, & Assessment, Secondary Math Coordinators	24-25 school year and ongoing
Instructional materials do not align with Iowa Core Standards.	Adopt materials that align with the Iowa Core Standards. HRS Level 3	Director of Curriculum, Instruction, & Assessment, Elementary & Secondary Math Coordinators	24-25 school year
Varying degrees of implementation of grade-level	Upon adoption of new materials, develop a common prioritized scope and sequence to provide a	Elementary & Secondary Math Coordinators,	24-25 school year

standards.	guaranteed and viable curriculum. HRS Level 3	building administrators, teachers	
Limited Access to Data Science and Statistics Instruction.	Examine course or grade level scope and sequence to ensure students have access to instruction addressing these standards. HRS Level 3 Building level teams explore ideas around encouraging enrollment in AP Statistics as a 4th year math option. HRS Level 3	Secondary Math Coordinator	24-25 school year

Instructional Practices

Limitation	Recommendations and Strategies	Person(s) Responsible	Target Date
Limited use of manipulatives	Incorporate, highlight and model the use of manipulatives during PDs. HRS Level 2 Build awareness of district manipulatives available for teachers to request and check out to support manipulative use. HRS Level 1, 2	Elementary & Secondary Math Coordinators, building administrators, IDS	23-24 school year and ongoing
Limited support for students not meeting grade-level standards	Professional development around UDL and scaffolds. HRS Level 2, 3 Build knowledge, capacity, and resources around MTSS, including targeted interventions. HRS Level 2, 3 Collaborative responsibility for student achievement. HRS Level 1 Development of proficiency scales to highlight progression of learning. HRS Level 3	Elementary & Secondary Math Coordinators, building administrators, IDS, teachers	23-24 school year and ongoing
Need for intentional planning of extensions and enrichment connected to grade level standards (PLC Question 4)	Professional development around true extension and enrichment (exploring core standards at a deeper level rather than moving on to next grade level content). HRS Level 2 Collaborate with ELP teachers. HRS Level 1	Elementary & Secondary Math Coordinators, ELP Coordinator, ELP & General Education teachers	23-24 school year and ongoing
Teachers have identified discourse in the mathematics classroom as a potential area for growth. Students expressed opportunities for discourse as an	Continue professional learning around discourse, including The 5 Practices for Orchestrating Productive Mathematics Discussions. HRS Level 2 Explore instructional materials that best support teachers as they implement opportunities for student discourse. HRS Level 2, 3	Elementary & Secondary Math Coordinators, building administrators, IDS, teachers	23-24 school year and ongoing

instructional practice that supports their learning and would like to regularly discuss their thinking with peers.			
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Assessment

Limitation	Recommendations and Strategies	Person(s) Responsible	Target Date
Current diagnostic and progress monitoring measures do not provide meaningful data aligned with instructional goals	Explore and/or develop diagnostics and progress monitoring protocols aligned with priority standards. HRS Level 4	Elementary & Secondary Math Coordinators	23-24 school year and ongoing
Inconsistent grading practices	Develop and implement proficiency scales for priority standards. HRS Level 3 Develop and implement common summative assessments. HRS Level 3 Examine standards based reporting and grading practices, development of proficiency scales and rubrics. HRS Levels 3, 4	Elementary & Secondary Math Coordinators, Proficiency Scale Teacher Teams	23-24 school year and ongoing

Professional Development

Limitation	Recommendations and Strategies	Person(s) Responsible	Target Date
Lack of time for teachers to collaborate and observe colleagues Zoom PD does not provide as robust of experience for participants. Core instruction is not meeting the needs of all learners - lack of training in how to use the materials to meet a wide variety of needs	Build district capacity to reach a larger audience in person through a “train the trainer” model. HRS Levels 1, 2 Employ a wider variety of professional development opportunities including but not limited to: - Team asynchronous learnings - After hours sessions and book studies - Video segments of ICCSD peers - Cluster professional development in person HRS Levels 1, 2 Continue professional development around research-based teaching practices.	Elementary & Secondary Math Coordinators, building administrators, IDS, teachers	23-24 school year and ongoing

	HRS Level 2		
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General Administration (systems)

Limitation	Recommendations and Strategies	Person(s) Responsible	Target Date
Teaching staff is not racially/ethnically representative of our student population.	Continue to advocate for hiring and retention practices that support a diverse teaching staff. HRS Level 1	Human Resources, building administrators	23-24 school year and ongoing
Inconsistent use of the MTSS system across the district.	Use MTSS as a model to measure effectiveness of core instruction. HRS Levels 2, 3 Continue to evaluate the implementation and effectiveness of MTSS by collecting data about students receiving intervention. HRS Levels 2, 3	Elementary & Secondary Math Coordinators	23-24 school year and ongoing
Inconsistent community-wide understanding of high quality math instruction.	Update the district website to serve as a resource for both families and teachers. HRS Level 1 Communicate about course offerings to families. HRS Level 1 Support teachers in communicating positive messages about math with families. HRS Level 1 Continued professional development on evidence-based practices in mathematics. HRS Levels 1, 2	Director of Curriculum, Instruction, and Assessment, Elementary & Secondary Math Coordinators, Director of Community Relations, building administrators, counselors, teachers	23-24 school year and ongoing
Continued use of tracking widens the opportunity gap.	Examine current course pathways and course expectations. HRS Level 3 Collect data around longitudinal course taking trends related to course skipping and acceleration. HRS Level 1	Executive Director of Secondary Schools Director of Curriculum, Instruction, and Assessment, Elementary & Secondary Math Coordinators, building administrators, counselors, teachers	23-24 school year and ongoing

