A MESSAGE FROM THE SUPERINTENDENT

Mathematics continues to be a challenge across the nation, and Idaho students are no exception, which is why I am so excited about the work being done through my department’s Math Initiative. Math is a foundational skill that all students must master in order to be college and career ready. Supporting math teachers with high-quality professional development is essential to student success. Our multi-pronged approach with on-site and virtual professional development opportunities, capacity builders, and coaches are designed to provide educators with best practices in math instruction. I appreciate all the partners we have in these endeavors and look forward to seeing the positive outcomes for Idaho students.

A MESSAGE FROM THE MATHEMATICS COORDINATOR

I have been honored to serve as Superintendent Ybarra’s Mathematics Coordinator for two and one-half years. One week into this role, I learned that the State Department of Education (SDE) team was going to facilitate reviewing, revising, and rewriting the Idaho Content Standards in Mathematics. Ten weeks later, the world-as-we-knew-it turned upside down as we entered several school years shaped by the COVID-19 Pandemic. Like other organizations, the team at the SDE pivoted to work in new ways to support Idaho’s leaders, teachers, and students during difficult, stressful times.

What I have learned from the last two years is that there are many brilliant people in Idaho who are passionate about helping all students be successful in their mathematics education. I am in awe of the talent we have in our state. When the water got turbulent these last few years, many worked together to solve problems and support our students. In this spirit, the theme of this publication showing highlights of the Idaho Math Initiative is “Rowing Together.”

Idaho mathematics education has big challenges ahead. We can harness the power of collective impact to solve them together. Students, parents, teachers, administrators, instructional leaders, policy makers, curriculum companies, and industry partners each have a role to play. I am committed to bringing these stakeholders together to support a K-12 mathematics system that prepares students for a range of opportunities after graduation. Let’s get rowing!
In 2022, the Idaho Regional Mathematics Centers (IRMC) organized their work with teachers and leaders around projects aligned to the SDE Strategic Goals.

Provide school-based, data-driven instructional coaching and professional development in mathematics in collaboration with the Idaho Building Capacity program.

Provide the state approved mathematics course for teachers to all regions of the state.

Develop and provide professional development events for Idaho High School Math educators in collaboration with the Math Transitions Network.

Build leadership capacity by developing a statewide mathematics teacher leadership network.
The Idaho Math Initiative is funded through Idaho Statute 33-1627 to promote the improvement of mathematical instruction and student achievement. This initiative provides high quality, ongoing professional development for Idaho mathematics educators. The State Department of Education collaborates with a variety of partners to support the implementation of the Idaho Content Standards in Mathematics through best practices in mathematics instruction.

2022-2023 PROFESSIONAL DEVELOPMENT FOCUS

- SDE SPONSORED VIRTUAL BOOK STUDIES
- COORDINATED WITH IDAHO COUNCIL OF TEACHERS OF MATHEMATICS WEBINARS
- TEACHING MATHEMATICAL THINKING COURSE
- TEACHING MATHEMATICAL THINKING LEVEL 2
- MATH TRANSITIONS
- K-3 MATH INTERVENTION
- MATH LEADERSHIP COHORTS
- SCHOOLWIDE MATHEMATICS SUPPORT
  On-site, customized professional development for a school or group of schools
- COORDINATED WITH CAPACITY BUILDERS
Student-centered teaching practices support mastery of the Idaho Content Standards in Mathematics.

1. Clearly communicate mathematics learning goals to students
2. Engage students in high-level thinking through challenging mathematical tasks
3. Support students in connecting mathematical representations
4. Facilitate meaningful discourse about mathematics among students
5. Help students demonstrate procedural fluency built upon conceptual understanding
6. Encourage student effort and perseverance in learning
7. Use evidence of student mathematical thinking to guide instruction

Modified for Idaho Students based on Principles to Actions: Ensuring Mathematical Success for All (NCTM, 2014).
Regional Mathematics Centers empower students in mathematics by increasing the efficacy and knowledge of their classroom teachers. The process begins with the Teaching Mathematical Thinking course and leads to additional professional learning opportunities. There is a long legacy of educators rising to coaching and leadership positions as a result of their work with the math centers, becoming trusted representatives of Idaho Mathematics Leadership not only at their district level, but also regionally and across the state.

Peggy Loutzenhiser, an instructional coach for the West Bonner School District, is one example of a teacher turned coach who has worked to increase her own expertise and the expertise of those around her. Over the years, Peggy has participated in book clubs, professional development, coaching trainings, and regional mathematics leadership meetings. She is a tenacious researcher of new content and actively shares her findings with anyone needing support. This spring, she led a multi-district professional learning seminar on the topic of fractions for Region 1 teachers.

Based on student needs, identified through ISAT data and school-based data, Peggy developed an individualized learning experience for the teachers involved. As a result, the teachers have added representational components to activities, developed instructional questions, created formative and summative assessments, and more importantly understand the significance of these materials in their work as teachers.

Building capacity means identifying and coaching leaders at the district level who share what they've learned on a local scale. Educators like Peggy Loutzenhiser embody this reality. She is a beacon for not only her own school and district, but for a network of teacher leaders across the state.
Idaho's rural communities present unique challenges for educators, such as changing populations and fewer resources supporting large geographic areas. When you add COVID-19 and staffing shortages, educators can feel isolated, become discouraged, and fall into an almost zombie-like survival mode.

That's what makes the staff at Culdesac so remarkable. Despite numerous challenges, Culdesac staff members are enthusiastic about engaging in professional development so that they can provide the best possible education for their students. Working with the Regional Mathematics Specialist to identify the needs of students and teachers, having conversations grounded in quality research, the staff made plans, and then repeated the process, incorporating revisions. The IRMC provides this kind of custom professional development at no cost to the school, funded by Idaho State Legislature.

Anthony Smallen, a teacher at Culdesac School, said, “I made huge progress working with the Regional Math Center over the years. Having someone to help us grow in whatever way we needed was amazing. I got more out of our meetings than from a lot of other professional development I've been to, and in a shorter time.” The students and teachers at Culdesac made impressive gains in performance this year. Especially for rural schools like Culdesac, a partnership with the IRMC helps stoke the fires of enthusiasm and love for teaching. We hope to expand the capacity of the Idaho Regional Math Centers and help more teachers and their students kindle and stoke that fire by providing high-quality support and good old-fashioned enthusiasm.
Skipping out of an intervention room with a wide smile on his face, a fourth-grader proclaimed, “I LIKE math!” This student embodies the positive shifts happening at Westside Elementary for both the teachers and the students.

The school year started as a collaborative effort involving staff, the Regional Mathematics Specialist, and the Capacity Builder to work on fluency activities, student engagement strategies, and increase ISAT math proficiency achievement at the school. Structural changes were made which included using focused interim ISAT assessments, redesigning the pacing calendar by focusing on essential standards, and creating common planning time for teams. The staff reexamined its use of Title services and instructional time dedicated to math teaching and intervention. IRMC support extended to job-embedded coaching and modeling of lessons, after-school workshops on unpacking the Idaho Content Standards and doing math tasks, and data analysis, as well as interventionist training, a key component in supporting a systemic approach to improvement.

As a result, more students are willing to tackle complex problems and have more effective dialogue exchanges in class. When teachers experience productive struggle with tasks, they are more apt to allow students to do the same. Teachers became more confident in using and making connections to visual models in math, as well as asking clarifying questions to understand a student’s thinking and approach.

One of the strengths of coupling regional mathematics specialists with capacity builders is the ability to provide consistent, focused support in response to the school’s needs. This work is only possible due to the leadership, willingness to learn, and flexibility of the school administrator, the focus and positivity of capacity builders, and the staff’s collaboration and openness to learning new ways of doing math. The Westside Elementary staff’s dedication to the process deserves to be recognized!
Today’s educators are striving to develop students’ abilities to engage the problem-solving process and use skills needed in the 21st century such as justifying, critiquing the reasoning of others, and communicating mathematically. The book, Routines for Reasoning by Kelemanik and Lucenta, offers teachers of mathematics a structure to intentionally support these mathematical practices with their students.

Sherri Bell, a West Jefferson High School mathematics teacher and leader who has been involved with the regional math center for over 5 years, led district wide professional development focused on Routines for Reasoning. K-12 teachers from the district gathered once a month to share in their professional practice and discuss the outcomes of reasoning activities they were implementing in their classroom. The teachers also had opportunities to engage in mathematical reasoning tasks and think about a new reasoning routine to try during their math instruction.

Through her action research, Sherri has noticed significant improvement in her students’ ability to communicate about mathematics and persevere in solving a difficult task. Students at the high school have expressed how, “sometimes explanations just make more sense when they come from another student”. During a district-wide needs assessment in early Fall 2021, many teachers from the district spoke to the quality of the collaborative environment and described a need for more formalized mathematics professional development. Sherri was excited to have a successful structure for K-12 mathematics professional development this year and is grateful for the support and coaching provided by the regional math specialists. She is looking forward to continuing her collaboration with the regional mathematics centers and is already planning high-quality, formalized district wide professional development for next year.
In 2021-2022, the Regional Mathematics Centers taught 18 sections of Teaching Mathematical Thinking, collectively teaching 637 educators. The pivot to online instruction during the pandemic has provided the ability for the Regional Math Centers to continue offering Teaching Mathematical Thinking in a variety of delivery models to best meet the needs of Idaho’s growing population. The Regional Math Centers are equipped to offer Teaching Mathematical Thinking in-person, in a hybrid format, and fully online. The Regional Math Specialists developed common course materials that can be utilized by course instructors across the state to ensure course alignment in the variety of course formats. In the upcoming academic year, Regional Mathematics Centers will plan and deliver a schedule of courses that provides statewide access to online and hybrid courses each semester as well as an in-person course in each region at least once a year. Moving forward, Regional Mathematics Centers will work collaboratively to create additional Teaching Mathematical Thinking courses to develop teachers’ mathematical content knowledge that supports the implementation of the Idaho Content Standards in Mathematics.
The Idaho Math Transitions project supports Idaho high schools offering math courses aligned with college and career interests, with the goal of advancing opportunities in mathematics for students. High school juniors and seniors may take math courses based on their chosen career pathway and maximize dual-credit general education math courses offered by Idaho’s public colleges and universities.

FRESHMAN ENROLLMENT IN FOUR-YEAR MAJORS (BURDMAN, 2015)

72% REQUIRE CALCULUS
28% REQUIRE OTHER MATHEMATICS

ARTS, TRADES, COMMUNICATIONS, LANGUAGES

HEALTH, BUSINESS, SOCIAL SCIENCES

STEM FIELDS

DC MATH IN MODERN SOCIETY MATH 123

AP STATISTICS

DC TECHNICAL MATH

DC STATISTICAL REASONING MATH 153

DC COLLEGE ALGEBRA MATH 143

DC/AP ENGINEERING

DC/AP COMPUTER SCIENCE

DC/AP PRE CALCULUS

DC/AP CALCULUS

NOT ALL COLLEGE MAJORS REQUIRE CALCULUS!

STUDENT CHOICES

TWO YEAR
FOUR YEAR
CERTIFICATION
MILITARY ED OPPORTUNITIES
APPRENTICESHIP

STANDARDS FOR ALL STUDENTS

CONTENT INCLUDES ALGEBRA, GEOMETRY, STATISTICS
FOUNDATIONAL COURSES

GRADE 9
GRADE 10
GRADE 11
GRADE 12
The Idaho Mentor Teachers program provides content-specific instructional support for Idaho’s new teachers. Mentor teachers learn how to coach and support teachers new to the profession, with the goal of creating collaborative communities of practices for Mentor Teachers as coaches; supporting Mentor Teachers to grow in their ability to facilitate robust conversations (planning and debriefing) with teachers that foster ambitious student-centered teaching practices; and deepening knowledge of a content-focused coaching model.

The online model includes three professional experiences delivered over two years:

- **A Professional Development Course** focusing on facilitating content-focused coaching cycles (e.g. Bickel et al., 2017; Gibbons & Cobb, 2016; West & Staub, 2003; West & Cameron, 2013), consisting of synchronous online sessions and asynchronous independent work between sessions.

- **Video Coaching Clubs** in which small groups meet over time to collaboratively analyze video clips of coaching conversations. This supports the development and understanding of coaching with an emphasis on noticing students’ mathematical thinking and student-centered instruction.

- **One on-One Coaching Cycles** in which Mentor Teachers support teachers new to the profession through synchronous and asynchronous components with the goal of engaging participants in reflective practice.
MATHEMATICS - TAKING ACTION COLLABORATIVE

MathTAC is a three-year teacher leadership collaborative in which teachers work closely with the math specialists at the Regional Math Centers across Idaho to develop leadership capacity within the math teaching community. Each year, teachers will collaboratively study selected materials to help establish their individual learning focus. After the first year, participants will choose one of two pathway options to continue their growth as a leader.
MULTI-TIERED SYSTEM OF SUPPORT

Multi-Tiered System of Support is a responsive system designed to support educators to deliver effective academic and behavioral instruction, allowing all students to learn, grow, and master grade level standards.

MULTI-LEVEL INSTRUCTION
Three tiered design to deliver responsive instruction and intervention to guide academics and behavior and optimize engagement and growth to close gaps and accelerate learning.

ASSESSMENT
A well-crafted and expertly timed, comprehensive assessment system establishes a feedback loop of performance data and allows for adaptation of teaching and learning.

DATA-BASED DECISION MAKING
Collecting and analyzing both qualitative and quantitative data helps determine how to positively influence school, instructional, and behavioral practices.

FAMILY AND COMMUNITY
Creating relationships between educators, families, and the greater school community through collaborative and structured efforts.

LEADERSHIP
A team approach taken by School and District leadership to create a system designed to connect assessment, data-based decision making, multi-level instruction, and family and community, established at local level.

Learn more:
https://www.sde.idaho.gov/topics/mtss/
Imagine Math

House Bill 623 provides funding for an online, adaptive mathematics program for Idaho school districts. During the 2021-22 school year, the State Department of Education (SDE) facilitated a rigorous Request for Proposals process. As a result, the SDE has renewed its partnership with Imagine Math for School Years 2022-23 through 2027-28 dependent upon continued funding approval by the Idaho legislature.

**Project Mission**
Partner with Idaho districts to create customized plans for success aligned to school improvement plans.

**Project Vision**
Students will graduate prepared for math success in their chosen post high school pathway.

**Strategic Goals**
- Increase number of student users in grade bands 6-8 and 9-12
- Increase percentage of student use and number of lessons completed for districts already using program
- Increase the implementation of district success plans
- Increase student achievement as measured by the Mathematics ISAT

Focused Professional Development Topics - Coming in 2023!

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ACTIVE STUDENTS

DISTRICTS SERVED

LESSONS COMPLETED

IDaho SCHOOLS with ACTIVE LEARNERS
The Idaho Regional Mathematics Centers are funded by the Idaho Legislature and supported by the Idaho State Board of Education. The Idaho State Department of Education and Regional Mathematics Centers work with a variety of partners to support success in mathematics education.