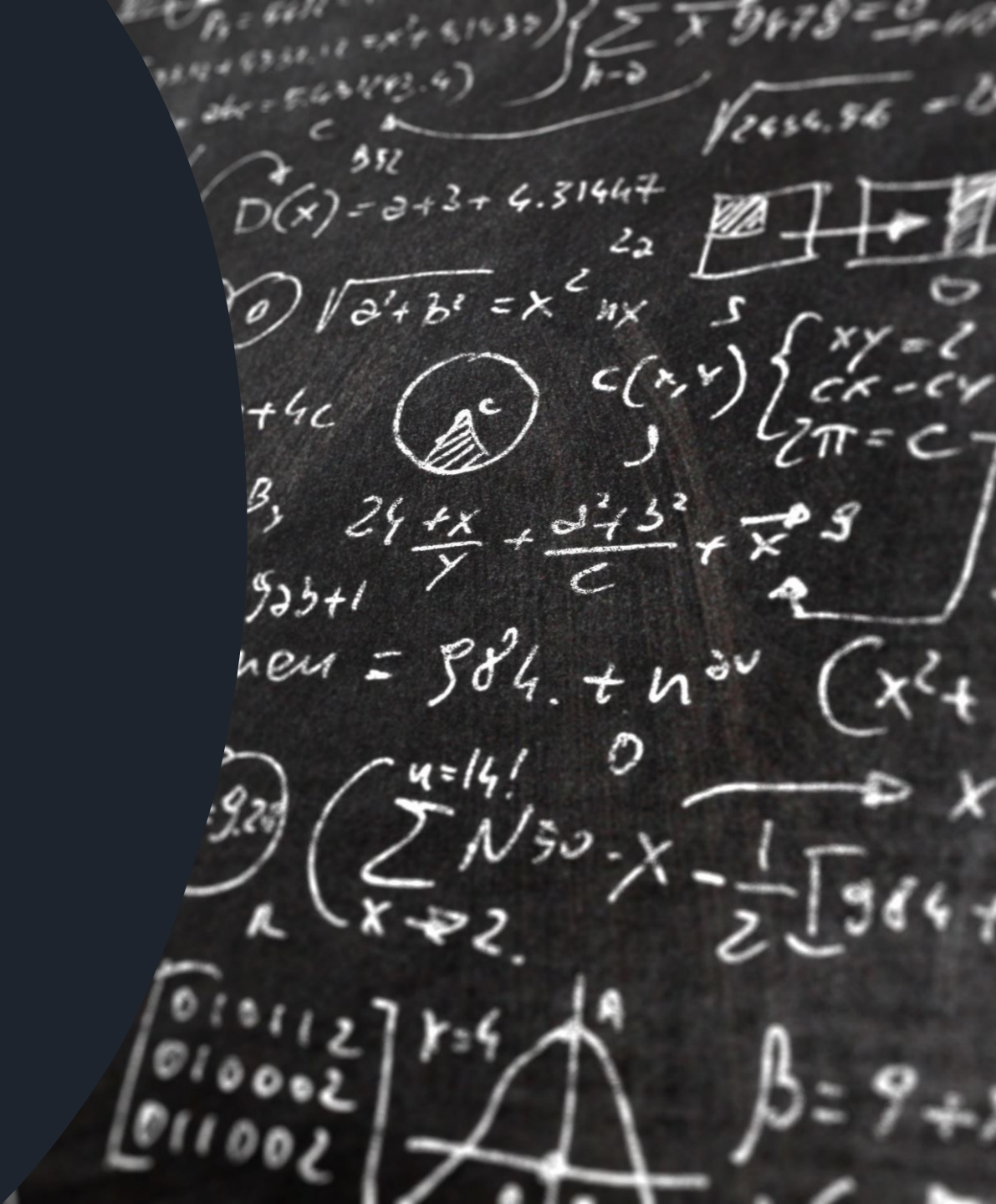
Elementary School Math Acceleration Program: Rationale and Student Challenge

Board of Education Meeting

June 20, 2023



Presentation Goals

- Background and history of shifts required by the Illinois Learning Standards for Mathematics
- Alignment of assessment practices to mathematics content for accelerated placement
- Supporting rigorous elementary math classroom practices
- Addressing unique math learner needs
- District 90 Acceleration Placement Process
- Roosevelt mathematics learning progressions

Common Core Mathematics Alignment: History and Background

Partnered with University of Illinois's Metro Chicago Math Initiative (MCMI)

Established the Math Leadership Team

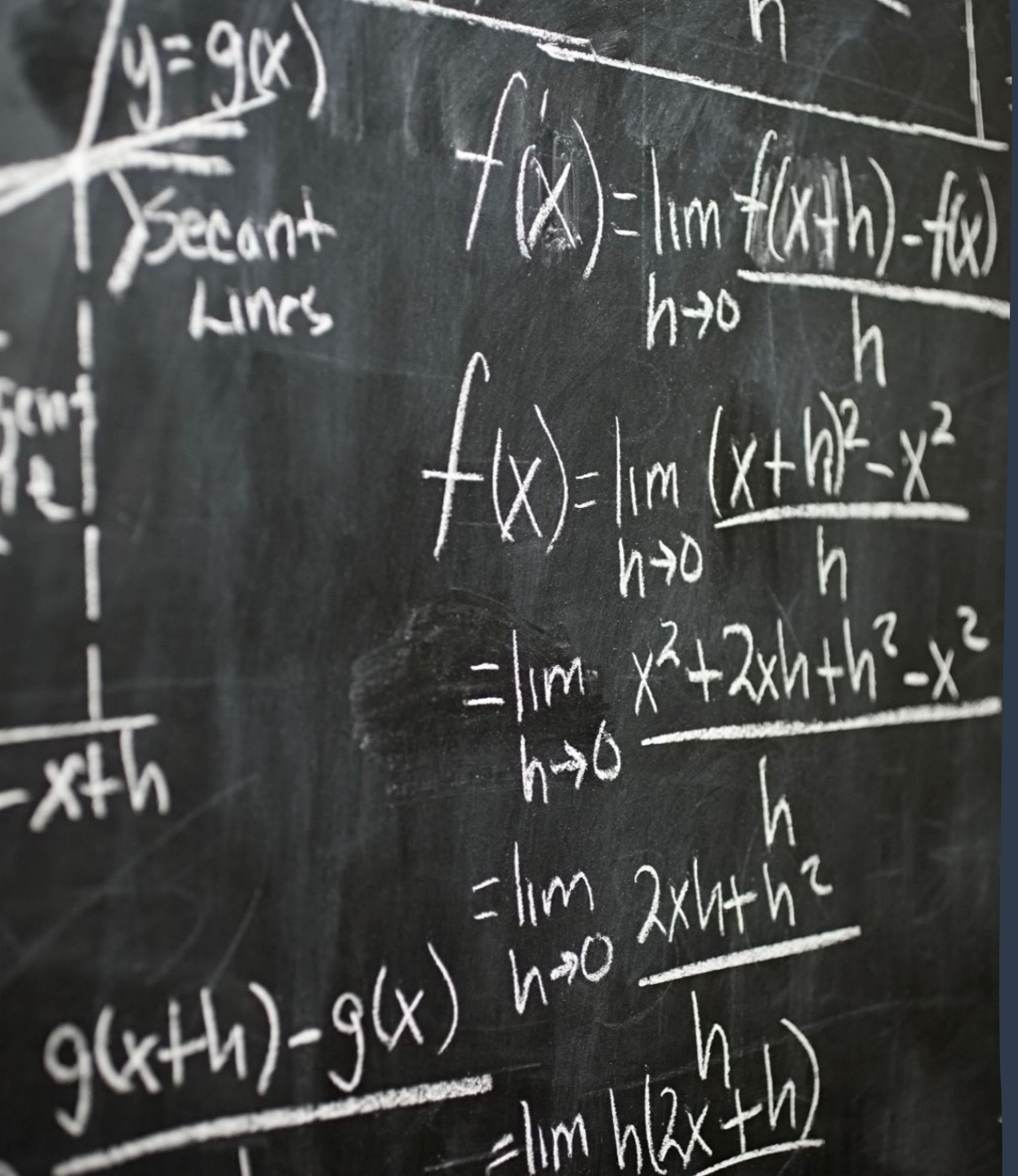
Enhanced the alignment to the Illinois Learning Standards for Mathematics

Conducted materials review to adopt core mathematics program

Provided training for all K-5 mathematics teachers to support the transition to new pedagogical and instructional standards

Illinois Learning Standards for Mathematics

- Reflect the Common Core Standards for Mathematics
- Require a balance between content standards and practice standards
- Integrate student collaboration and discourse
- Support the five strands of mathematical proficiency



Five Strands of Mathematics Proficiency

- **Conceptual Understanding**: comprehension of mathematical concepts, operations, and relations
- **Procedural Fluency**: skill in carrying out procedures flexibly, accurately, efficiently, and appropriately
- **Strategic Competence**: ability to formulate, represent, and solve math problems
- **Adaptive Reasoning**: capacity for logical thought, reflection, explanation, and justification
- **Productive Disposition**: habitual inclination to see math as sensible, useful, and worthwhile coupled with a belief in one's own self-efficacy

Source: *Adding it Up: Helping Children Learn Mathematics,* National Academies Press (2001)

Shifting from Cognitive Abilities Test (CogAT) to Silicon Valley Math Initiative (SVMI) Assessment for Accelerated Math Placement

COGAT

- Standardized multiple choice assessment
- Assesses verbal, quantitative, and non-verbal skills
- Measures general thinking skills that develop over time
- Highly correlated with fluid reasoning and success in school

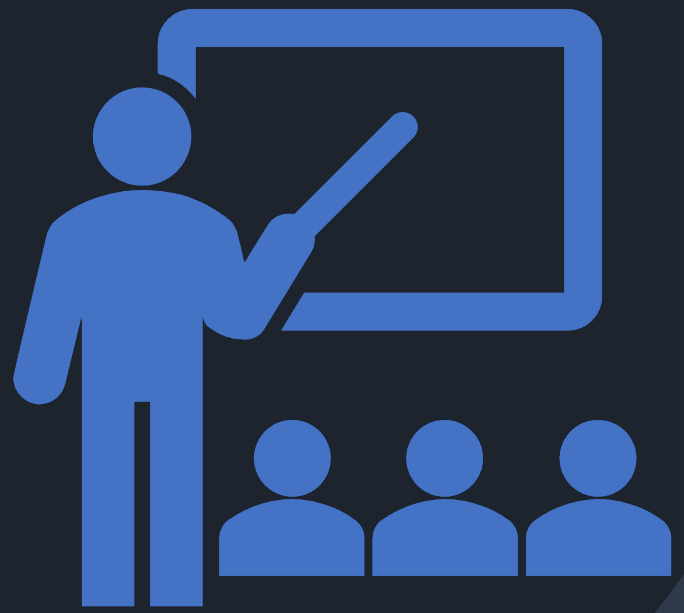
SVMI

- Provides problem-solving tasks that reflect the five "big ideas" of each grade level
- Assesses grade-level proficiency with concepts, use of multiple strategies, creative problem-solving, and the ability to explain math reasoning
- Scored by the University of Illinois at Chicago's Metro Chicago Math Initiative
- Proficiency levels are determined by norms established annually by SVMI
- Tasks are released annually

Elementary Mathematics Classroom Practices

- Class placement with thought partner or partners (professional colleagues)
- Collaborative planning between classroom teachers, math specialists, and instructional specialists to differentiate instruction
- Implementation of additional math challenge during in-class instruction
- Regular opportunities for students to receive feedback

Supporting Elementary Math Classroom Practices

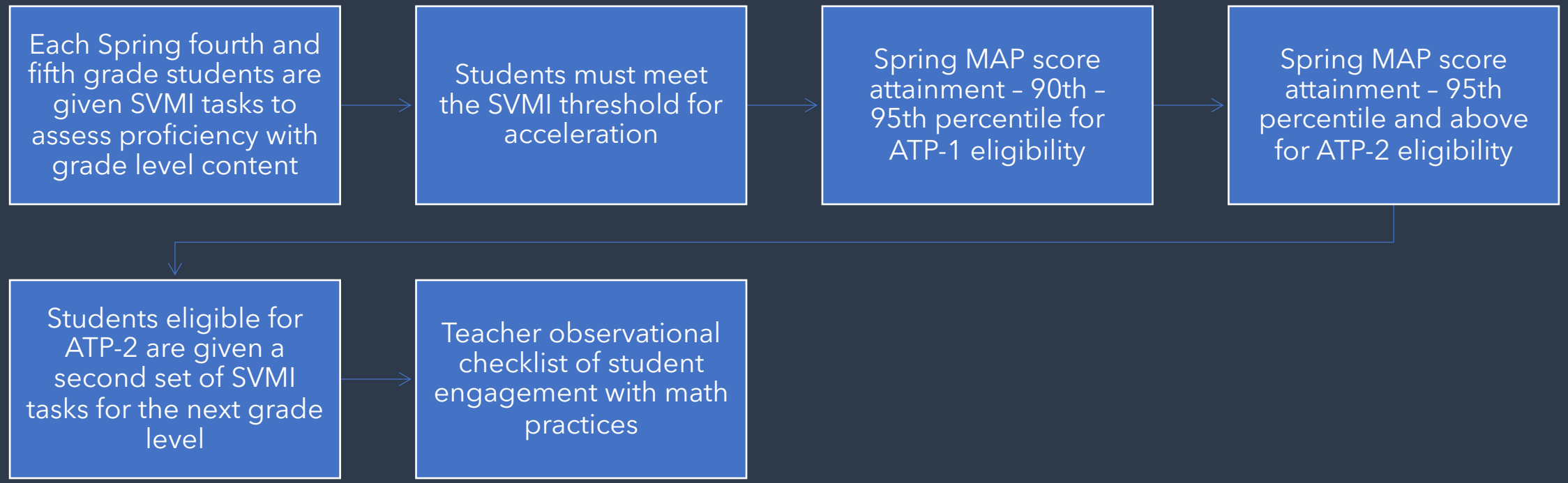


- Elementary Math Leadership Team supports consistency and alignment of resources and practices across grade levels and schools
- Instructional specialists provide ongoing differentiation support for individual teachers and grade level teams
- Grade level teams review of student work to identify challenge needs for student
- Routine review of resources to ensure multiple entry points for students needing "high ceiling challenge"

Addressing Unique Math Learner Needs

- Target appropriate placement for all students through use of multiple data points
- Provide alternative evaluation opportunities through the Acceleration Placement Process policy, as appropriate
- Collaborate during summer months to review resources, practices, and grade-level scope and sequence.

Accelerated Math Placement Process



Roosevelt Middle School Mathematics Learning Progressions

Instructional Progressions	Grade 5	Grade 6	Grade 7	Grade 8
Instructional Math	Content: Grade 5 with modifications Materials: Aligned to IEP goals	Content: Grade 6 with modifications Materials: Aligned to IEP goals	Content: Grade 7 with modifications Materials: Aligned to IEP goals	Content: Grade 8 with modifications Materials: Aligned to IEP goals
Grade-level	Content: Grade 5 standards Materials: Investigations	Content: Grade 6 standards Materials: CMP	Content: Grade 7 standards Materials: CMP	Content: Grade 8 standards Materials: CMP
ATP-1	Content: Grade 5/6 Materials: Investigations/CMP	Content: Grade 6/7 Materials: CMP, Desmos	Content: Grade 7/8 Materials: CMP, Desmos	Content: Algebra Materials: Desmos
ATP-2	Content: Grade 6/7 Materials: CMP, Desmos	Content: Grade 7/8 Materials: CMP, Desmos	Content: Algebra Materials: Desmos	Content: Geometry Materials: Discovering Geometry

Investigations in Number, Data, and Space 3 developed by TERC, Cambridge, MA (revised 2016)
Connected Math Project 3 and 4 developed by Michigan State University (2014, pre-print pilot)
Desmos, Amplify Learning (2022)
Discovering Geometry, Kendall Hunt (2015)

Questions?