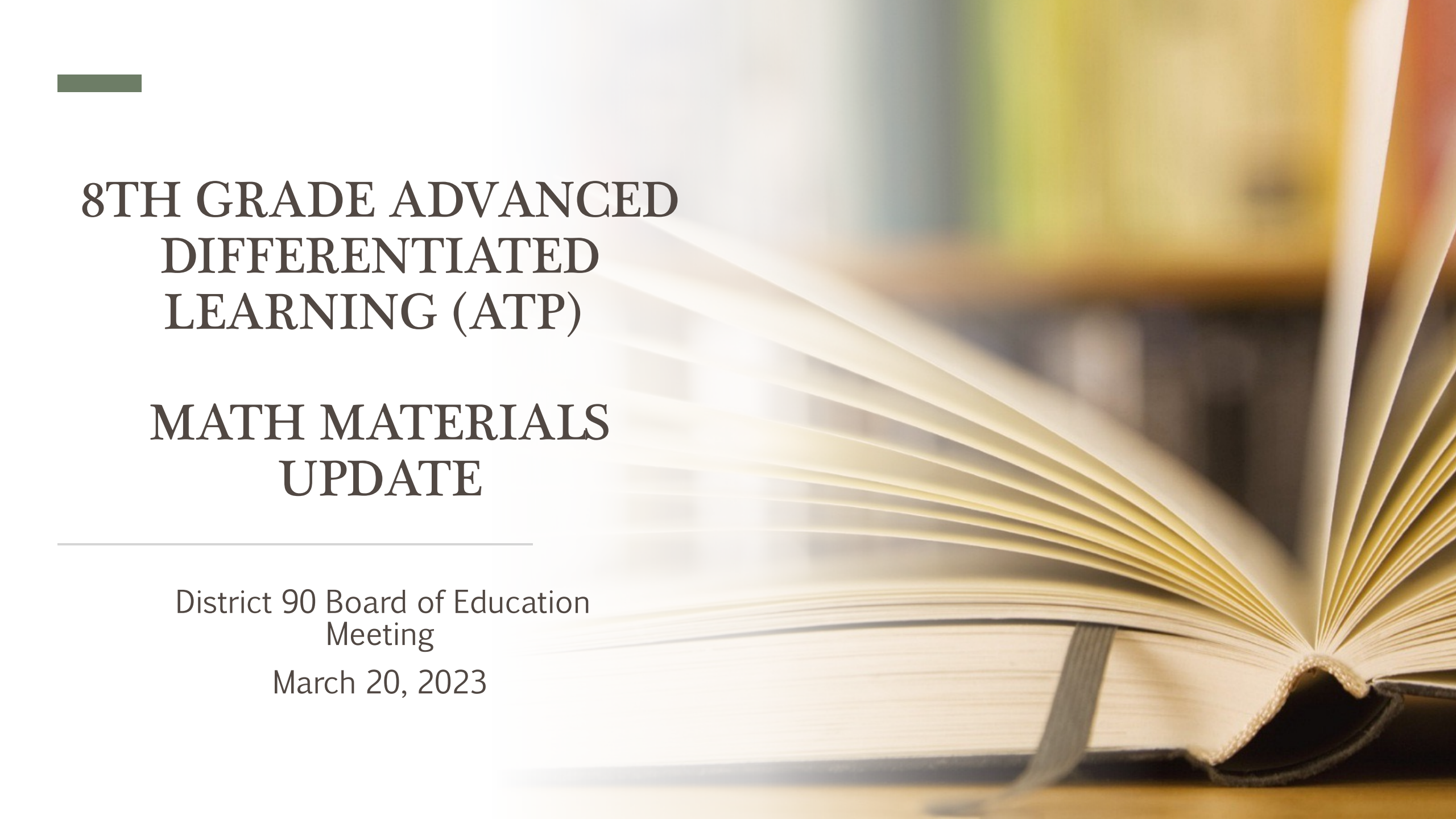
8TH GRADE ADVANCED DIFFERENTIATED LEARNING (ATP)

MATH MATERIALS UPDATE

District 90 Board of Education Meeting

March 20, 2023



Math Materials Vetting Team

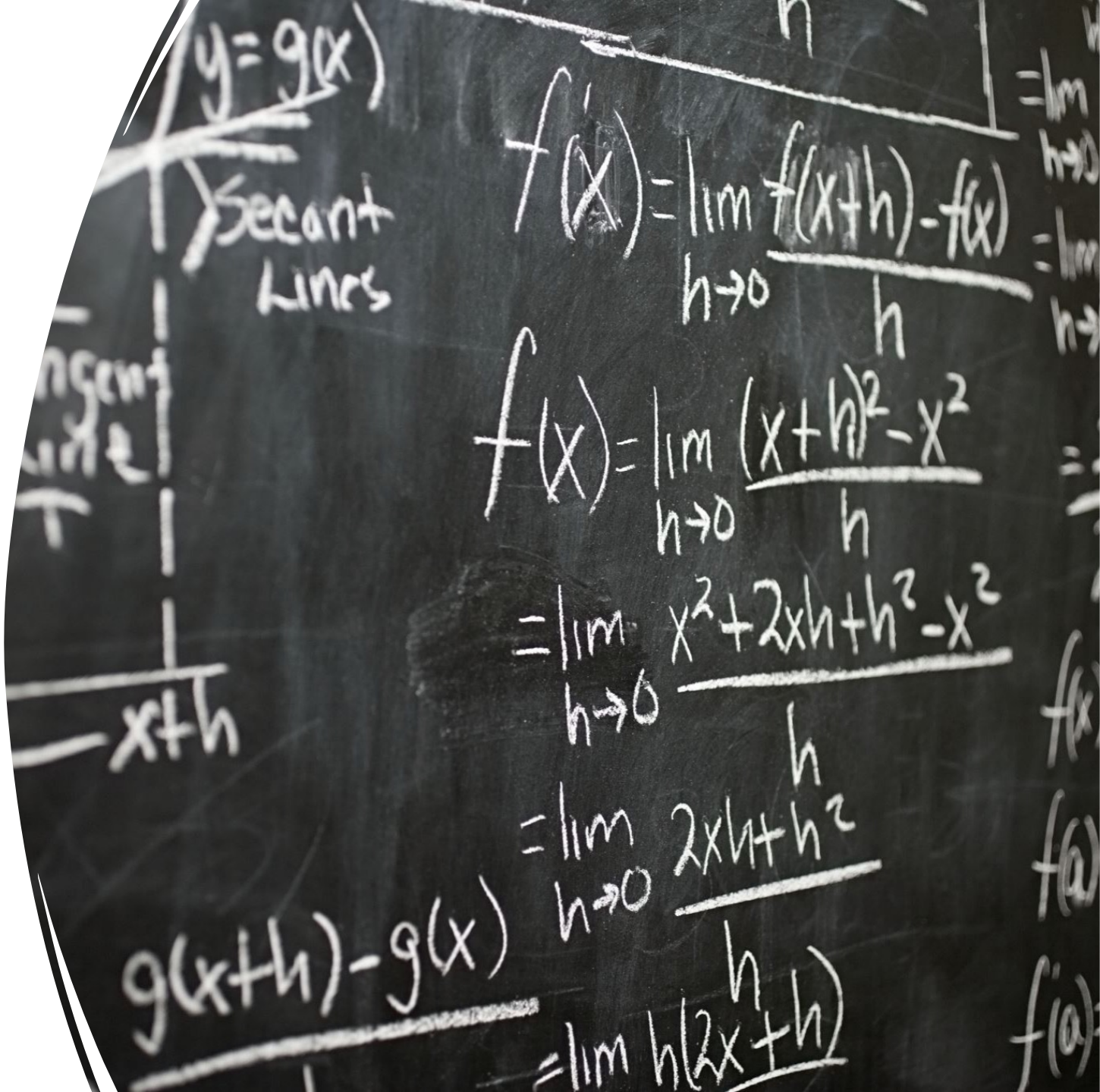
Member	Grade Level
Meg Navolio	Grade 8
Melissa Pancer	Grade 7
Kelly Bower	Grade 7 & 8
Nancy Mueller	Math Coach

Essential Understandings for Selecting Instructional Materials

- Teachers guide student learning; materials support the process
- There is no perfect instructional program or set of materials
- The pilot process has acknowledged limitations
- Professional development is critical for the success of the implementation
- On-going professional collaboration is essential for instructional alignment

Math Materials Update: Rationale

- Provide unified foundational curriculum versus pulling from multiple sources
- Tighten alignment to Algebra I standards
- Ensure a smooth transition to high school mathematics pathways



Math Materials Update: Review Process

Summer 2022

- Collaborated with Metro Chicago Math Initiative and colleagues in other school districts to identify three sets of materials
- Utilized the Common Core State Standards Mathematics Curriculum Materials Analysis Project rubric with a focus on functions and equations and inequalities
- Vetted materials to determine content alignment/strength and the Standards for Mathematical Practices

Fall 2022-Winter 2023

- Implemented Desmos (equations and inequalities) and Imagine Learning (functions)
- Gathered quantitative and qualitative data
- Analyzed data to determine materials recommendation

Pilot Materials: Desmos and Imagine Learning

Desmos

- Supports Grade 6 – Algebra I
- Lessons pose problems that invite a variety of problem-solving approaches
- Facilitates rich classroom discussions
- Incorporates both print and digital lessons
- Based on work from Illustrative Mathematics and Open Up Resources

Imagine Learning

- Supports 9-12 math curriculum
- Provides instructional routines and collaborative discourse
- Digital tools promote thinking and reasoning
- Illustrative Mathematics certified partner

Evaluation Rubric: Common Core State Standards Mathematics Curriculum Materials Analysis Project

Source: Common Core State Standards Mathematics Curriculum Analysis Project (2010)

Designed to provide educators with objective measures and tools to assist in selection of materials

Assesses curriculum materials alignment to the Common Core Content Standards and the Standards for Mathematical Practice

Funded by Brookhill Foundation and Texas Instruments

Supported by the Council of Chief State School Officers and the National Council of Supervisors of Mathematics

Desmos Algebra 1 Unit 2
Reasoning with Equations and Inequalities

	Number of REI Standards in Unit 2= 4				
	Not Found	Low	Marginal	Acceptable	High
Content Coverage	0	0	0	0	4
Balance of Mathematical Understanding and Procedural Skills	0	0	0	0	4
Notes	• Variety of lessons including: card sorts, stations, interactive tech lessons • Provides visual representations for new concepts such as introducing the standard form of linear equations • Five representations activity • Summary notes and practice handout to accompany each lesson. Students interact with the notes sheet.				

Imagine Learning Unit 4
Interpreting Functions

	Number of Function Standards in Unit 4=12				
	Not Found	Low	Marginal	Acceptable	High
Content Coverage	1	1	0	3	7
Balance of Mathematical Understanding and Procedural Skills	1	1	0	4	6
Notes	• Students had to create their own graphs more often. • Student workbook and lesson summaries (not interactive).				

Pilot Results

Both sets of materials rated high on content coverage

Desmos rated higher on the Standards for Mathematical Practice

Desmos received higher engagement rating from students

The Standards for Mathematical Practice

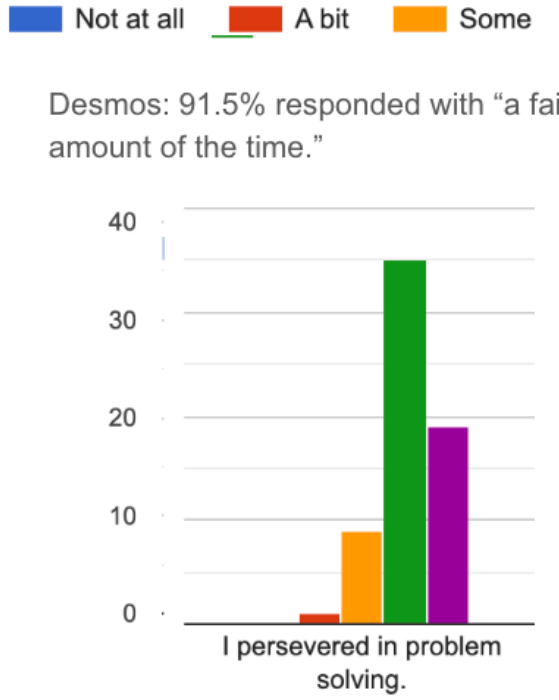
"describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. (CCSSM, p.6)"

Mathematically proficient students...

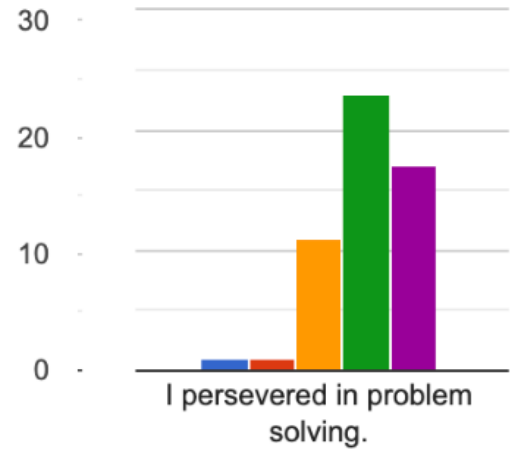
1. start by explaining to themselves the meaning of a problem and look for entry points to its solution
2. understand and use stated assumptions
3. can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace
4. consider the available tools when solving a mathematical problem
5. try to communicate precisely to others
6. look closely to discern a pattern or structure
7. notice if the calculations are repeated, and look for both general methods and for shortcuts

Student Feedback Survey Results

Make sense of problems and persevere in solving them.



Desmos: 91.5% responded with “a fair to large amount of the time.”

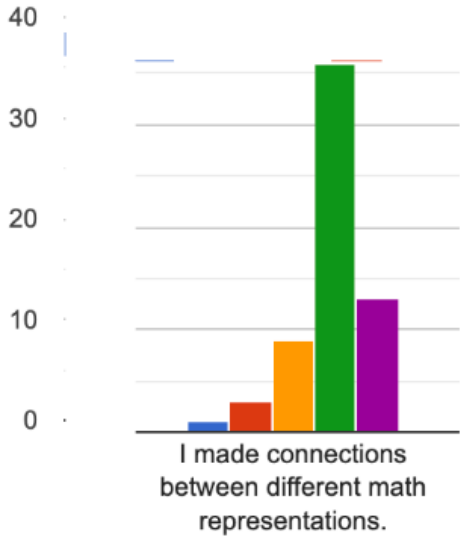


Imagine Learning: 77% responded with “a fair to large amount of the time.”

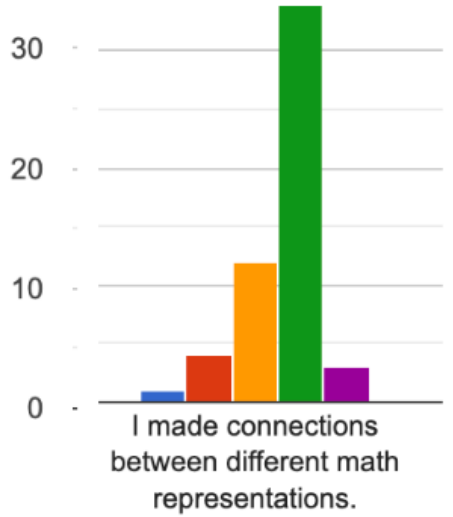
Student Feedback Survey Results

*Reason abstractly and quantitatively **and** Model with mathematics*

Desmos: 83% responded with “a fair to large amount of the time.”

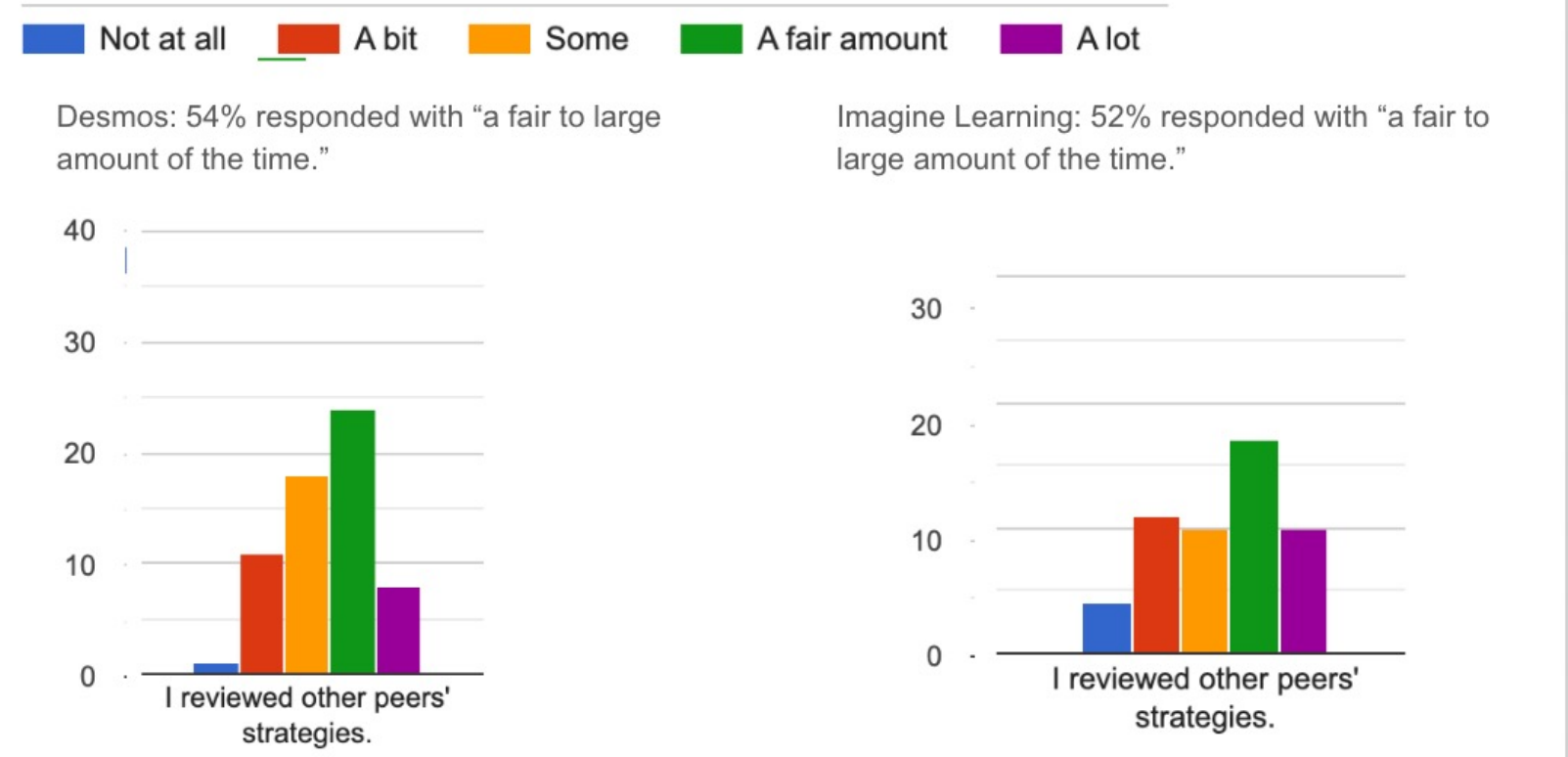


Imagine Learning: 71% responded with “a fair to large amount of the time.”



Student Feedback Survey Results

Construct viable arguments and critique the reasoning of others.

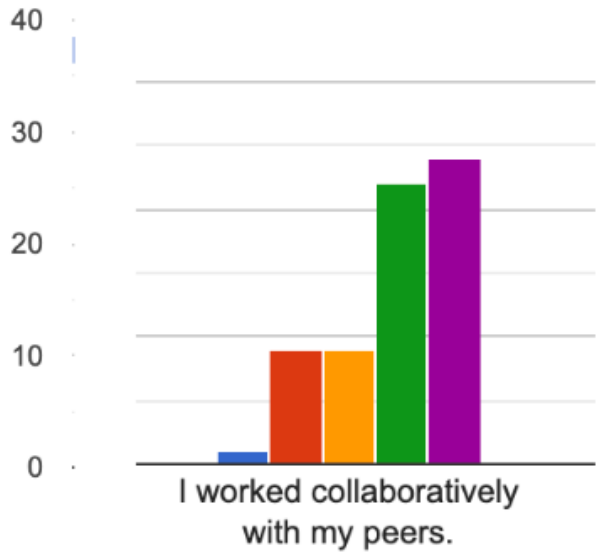


Student Feedback Survey Results

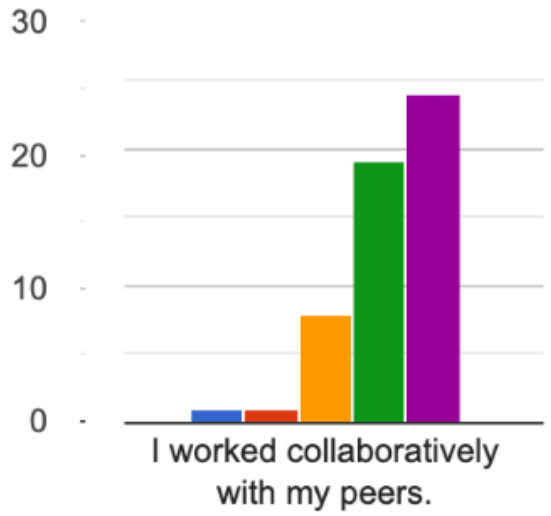
Construct viable arguments and critique the reasoning of others.

Not at all | A bit | Some | A fair amount | A lot

Desmos: 80% responded with “a fair to large amount of the time.”



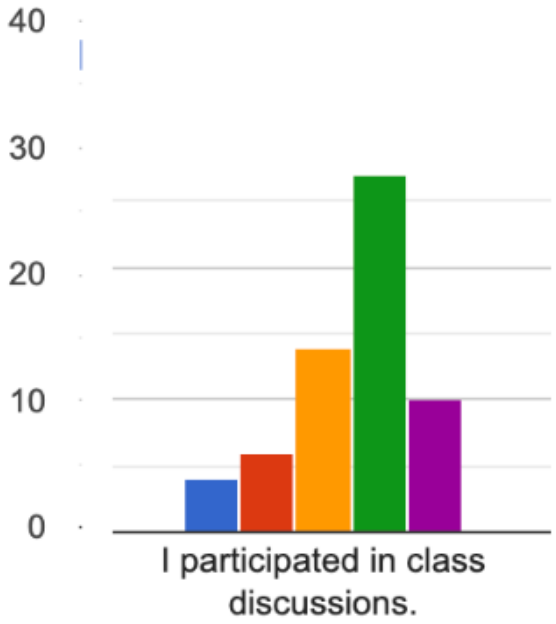
Imagine Learning: 82.6% responded with “a fair to large amount of the time.”



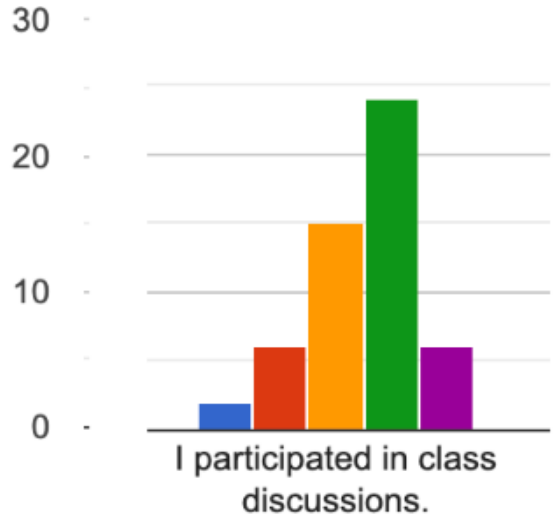
Student Feedback Survey Results

Construct viable arguments and critique the reasoning of others.

Desmos: 63% responded with “a fair to large amount of the time.”



Imagine Learning: 57% responded with “a fair to large amount of the time.”



Next Steps

Review scope and sequence for the 2023-2024 school year

Develop implementation plan

Provide professional learning support

Engage in professional collaboration to review student assessment data

Questions?