



Moving Away From Academic Streaming in Secondary School

WRAPSC
Feb 1, 2022

How We Got Here



- Ontario Government announced a commitment to end streaming in Grade 9, beginning with math to be implemented in September 2021
 - MTH 1W



- Ontario Government announced that beginning in September 2022, all grade 9 subjects will be offered in one stream
 - SNC 1W, ENG 1D, CGC 1D, FSF 1D



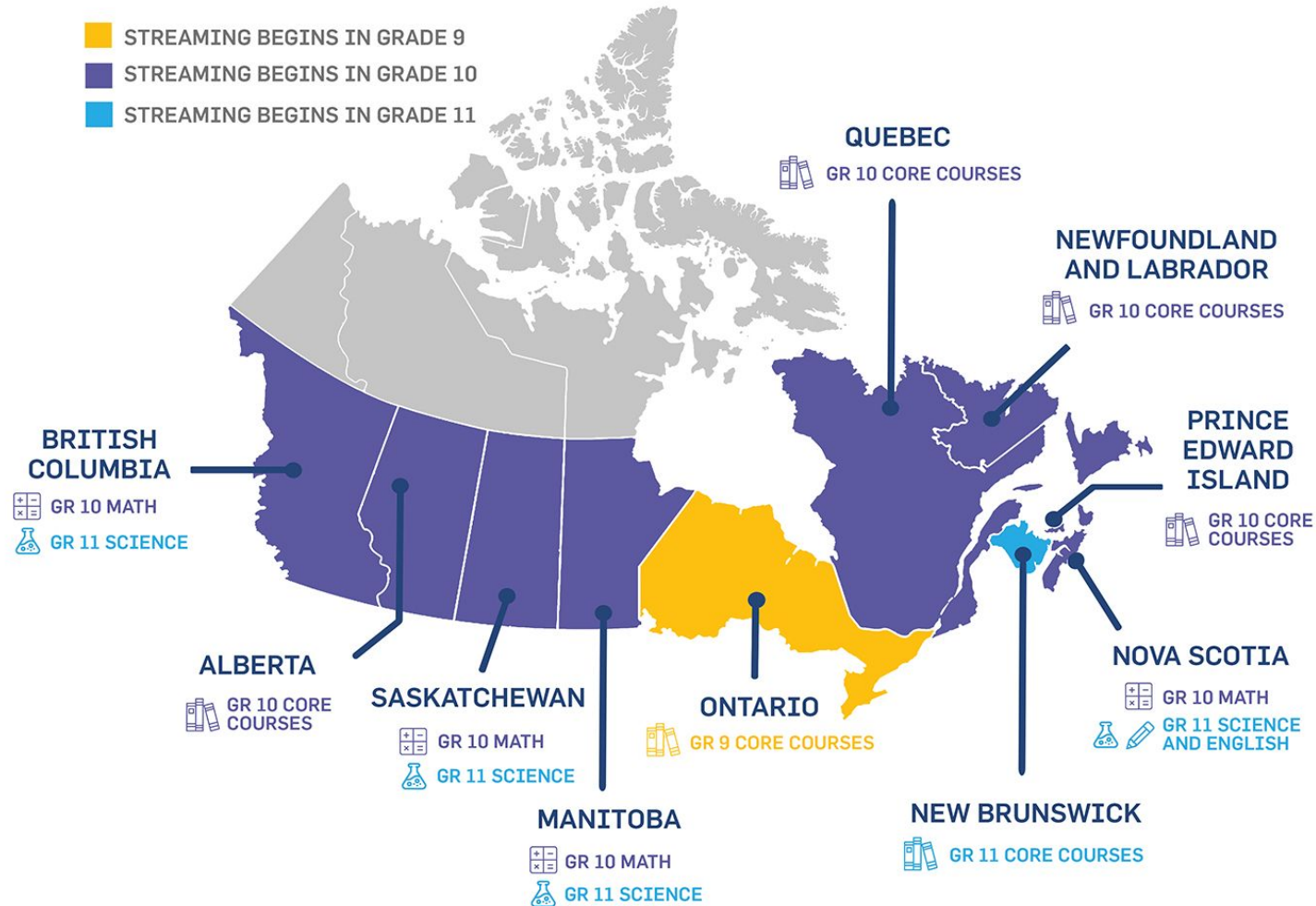
- WRDSB announced that to maintain equitable access to post-secondary pathways, beginning in September 2022 grade 10 applied mathematics will no longer be offered, leading most students to take MPM 2D

Why Eliminate Streaming?

- Focusing on welcoming students
- Equal access to all academic pathways for all students



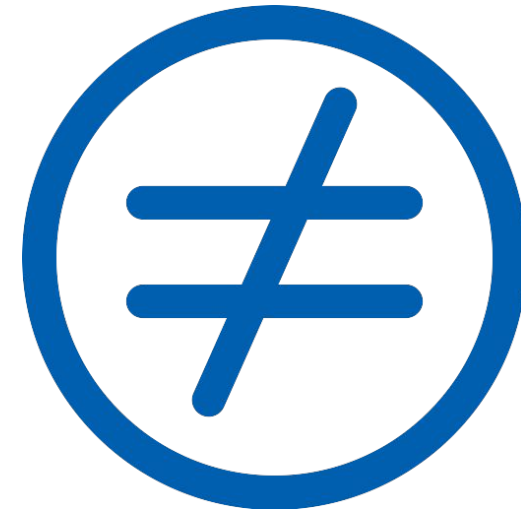
Why De-stream?



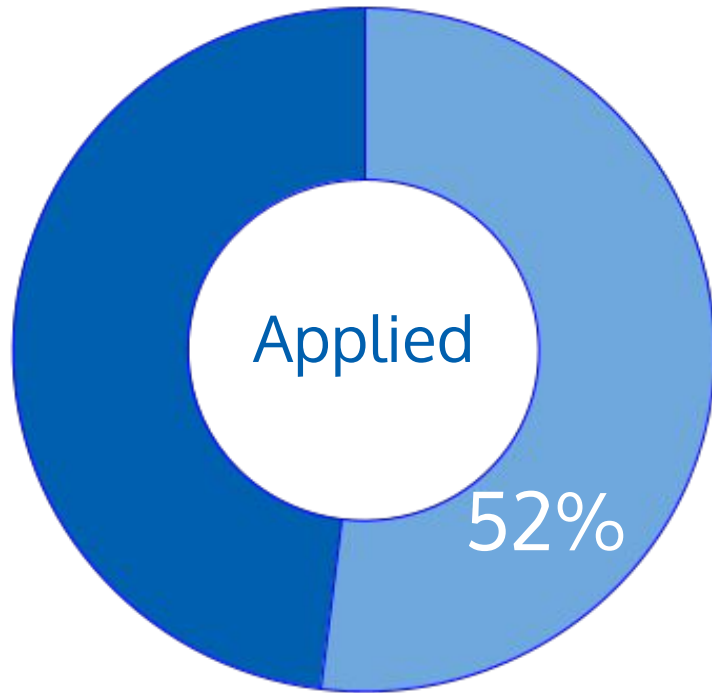
Why De-stream? Equity

“Data shows that streaming has a **detrimental effect** on students, but particularly on Indigenous, Black, and other racialized students, culturally and linguistically diverse students, students from low-income households, and students with special education needs.”

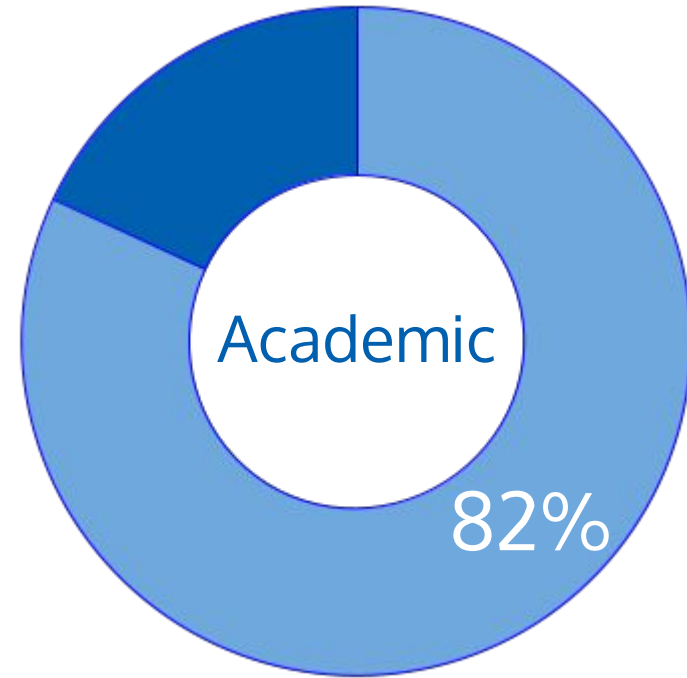
-Ontario Ministry of Education




4 Year WRDSB Graduation Rates By Grade 9 Math Course Type



Cohort:
2014-2015
WRDSB



Graduated 
Did Not Graduate 

Why Is This Good For Students?

- Equity of Access and Opportunity - Graduation and Post Graduation Pathways.
- **All students benefit** from learning in groups of students of varied abilities and interests (OECD, 2012).

Common Misunderstanding


Myth

“High achieving” students
will be “held back” in a
de-streamed classroom



Destreaming and the Secondary Math Program

Unpacking the New Grade 9 Mathematics Course: Strand Comparison

Elementary Mathematics, Grades 1-8, 2020	Grade 9 Academic, 2005	Grade 9 Applied, 2005	 New Grade 9 Mathematics Course, 2021
Social-Emotional Learning (SEL) Skills in Mathematics and the Mathematical Processes			Social-Emotional Learning (SEL) Skills in Mathematics
Number			Mathematical Thinking and Connections
Algebra <i>Note: Coding and Mathematical Modelling are included in this strand</i>	Number Sense and Algebra	Number Sense and Algebra	Number
Data	Linear Relations	Linear Relations	Algebra <i>Note: includes Coding</i>
Spatial Sense	Analytic Geometry		Data <i>Note: includes Mathematical Modelling</i>
Financial Literacy	Measurement and Geometry	Measurement and Geometry	Geometry and Measurement
			Financial Literacy

What Might Look Different



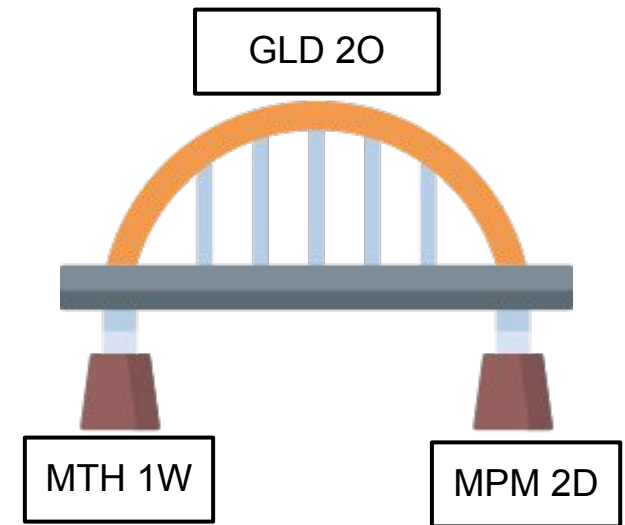
Independent Learning
Textbooks
Homework
Tests/Exams



Collaborative Learning Environments
Variety of Resources
Purposeful Practice
Many ways to demonstrate understanding

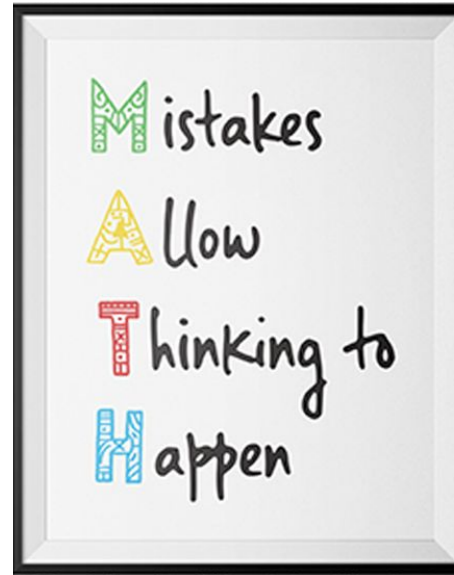
Building a Bridge for Success - GLD 20

“GLD20 is designed to help students deepen their understanding of mathematical concepts that will be important for their learning when transitioning between MTH1W and MPM2D, while gaining necessary tools and skills for the workplace of tomorrow. Through integrated activities related to career exploration, experiential learning, and entrepreneurship, students will have an opportunity to improve their understanding of foundational mathematical concepts and skills. This course will be an interactive and engaging experience to help students gain transferable skills for continued learning and work.”



How can I support my child?

- Talk about mathematics in a positive light
- Normalize and value mistake-making as an important part of the learning process
- Pay attention to where math “shows up” in everyday life
- Talk about learning rather than grades
- Reach out to the teacher when needed
- Consider this [Advice for Parents](#) from Jo Boaler



Find your zodiac sign to see if you are a math person

Aries: You are a math person

Libra: You are a math person

Taurus: You are a math person

Scorpio: You are a math person

Gemini: You are a math person

Sagittarius: You are a math person

Cancer: You are a math person

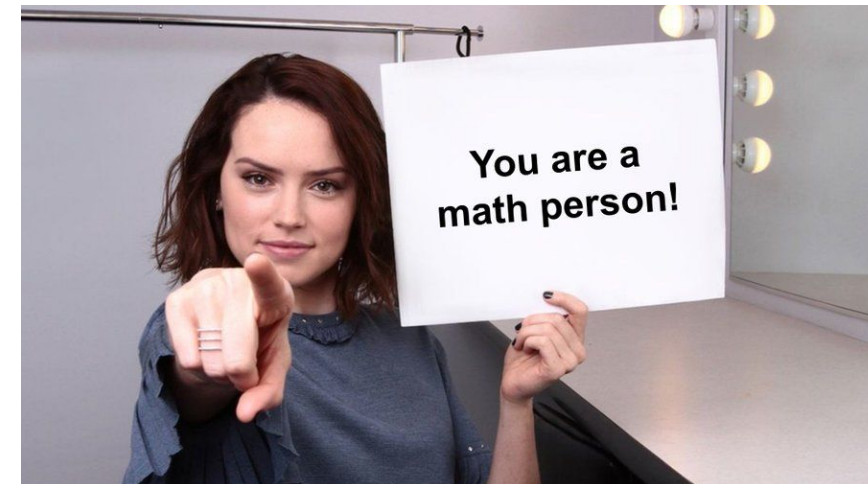
Capricorn: You are a math person

Leo: You are a math person

Aquarius: You are a math person

Virgo: You are a math person

Pisces: You are a math person

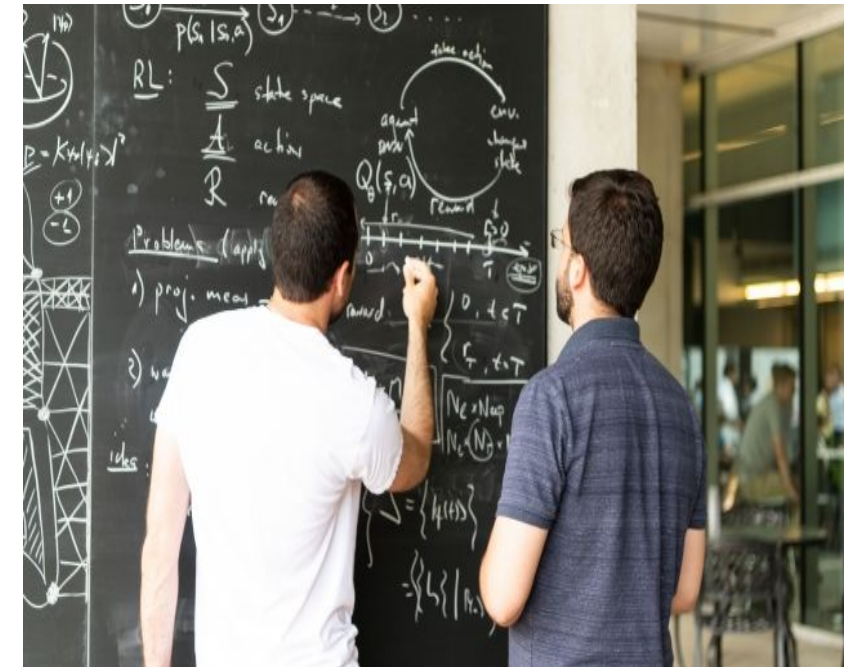


Questions?



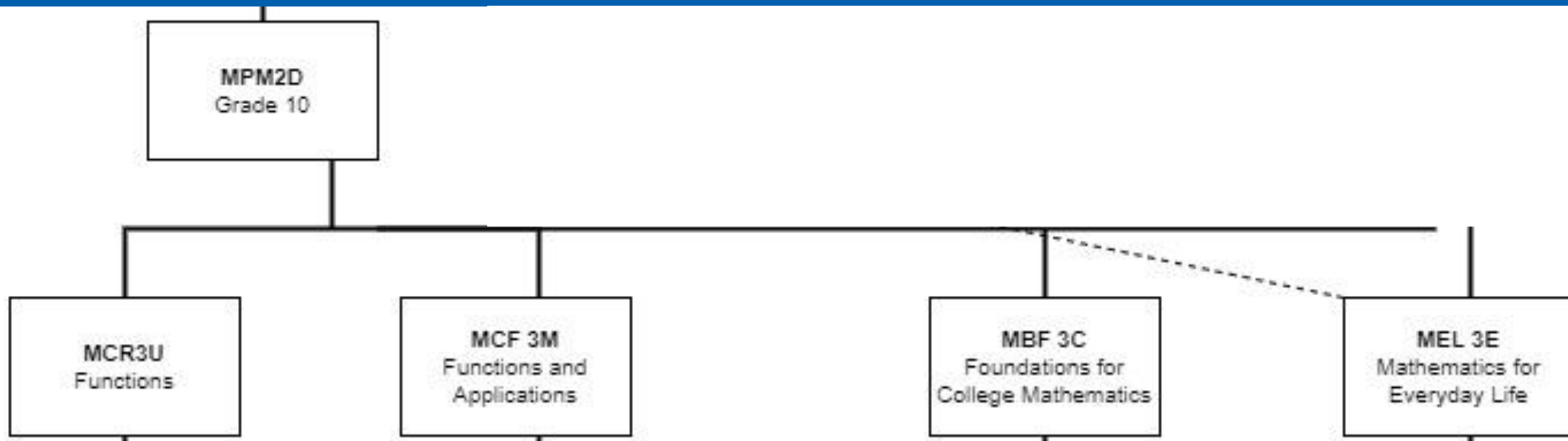
WRDSB Students Sept. 2021

MTH1W Curriculum



Perimeter Institute Home
Page 2021

Pathways





Elementary (Gr. 1 - 8) Math and the New Curriculum

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THE ONTARIO CURRICULUM

GRADES 1–8

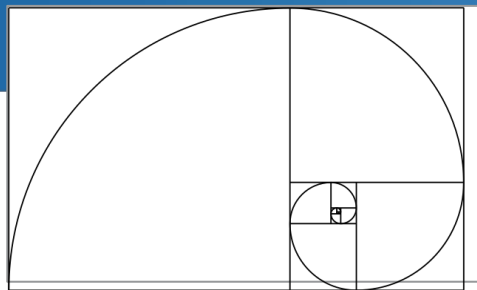
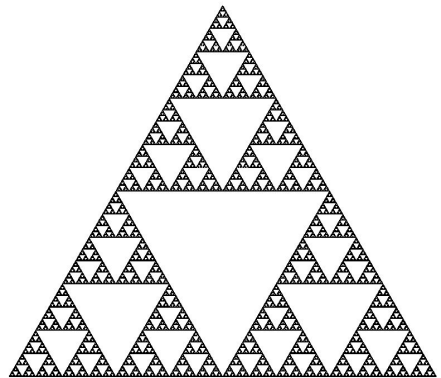
MATHEMATICS

Curriculum Context

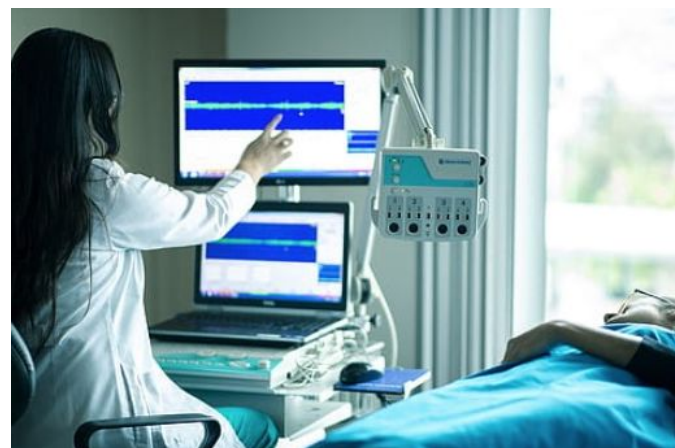
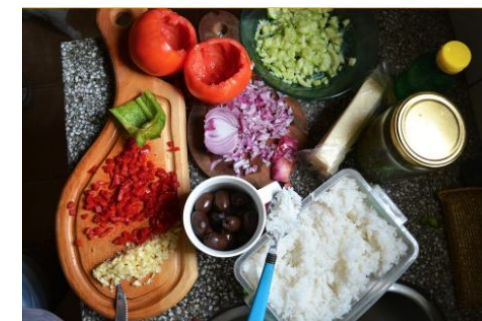
2020



What is the vision of the new curriculum?



“Understand the importance of and appreciate the beauty of mathematics” p. 6



What will make the new curriculum successful?

“Most effective when it values and celebrates the diversity of the students” p. 10

What will make the new curriculum successful?

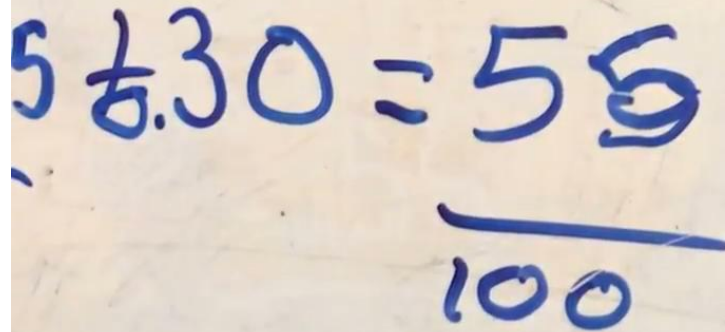
“Foundational mathematics concepts and skills to become capable and confident mathematics learners” p. 10

Waterfall Chat

$$\frac{1}{4} + \frac{3}{10}$$

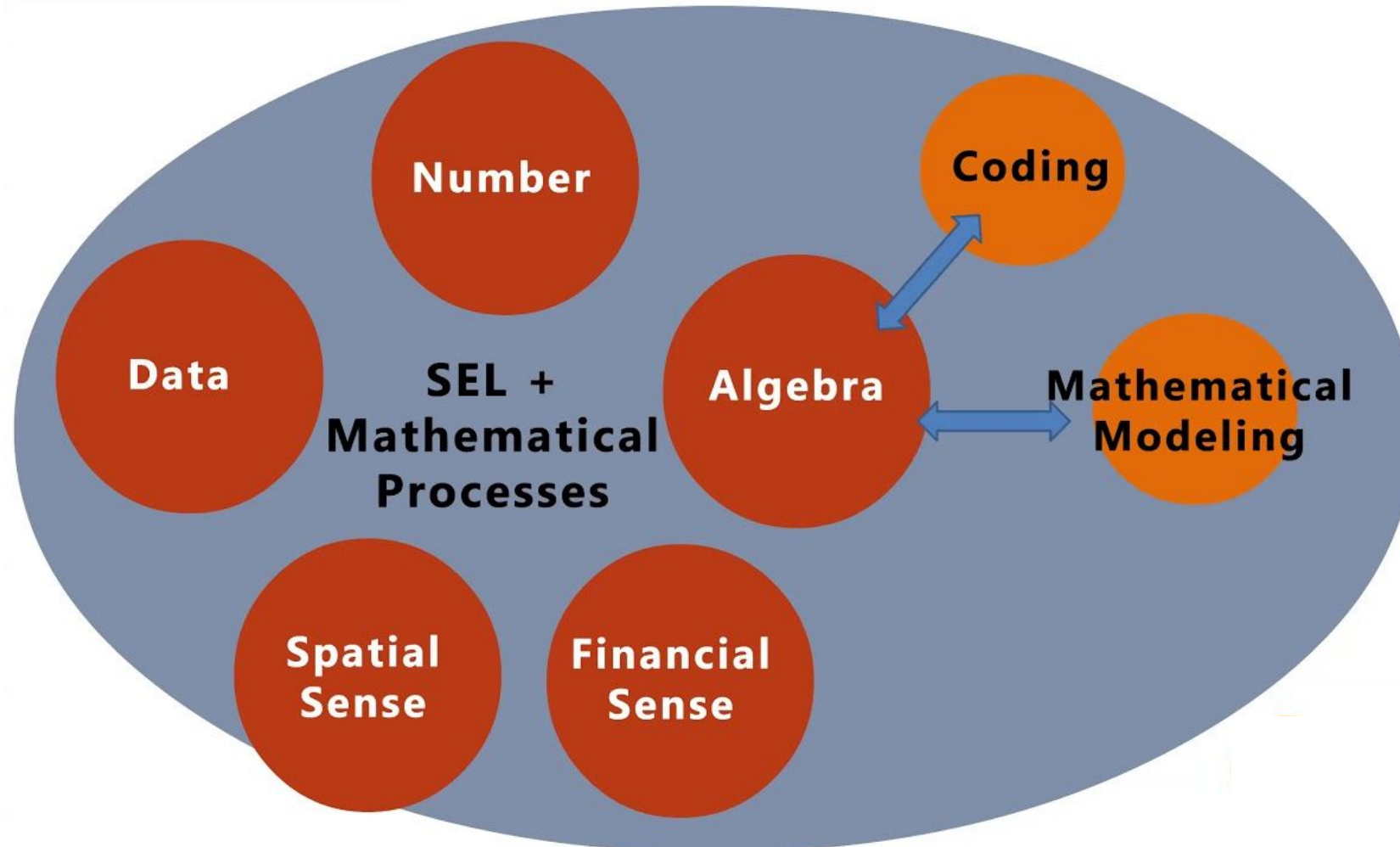
A look into the mind of a grade 5 student

$$\frac{1}{4} + \frac{3}{10}$$



5 & 30 = 55
100

Overview of Strands



Social Emotional Learning and Mathematical Processes

OVERALL EXPECTATION A1. apply, to the best of their ability, a variety of social-emotional learning skills to support their use of the mathematical processes and their learning in connection with the expectations in the other five strands of the mathematics curriculum

To the best of their ability, students will learn to:	... as they apply the mathematical processes:	... so they can:
1. identify and manage emotions	<ul style="list-style-type: none"> • problem solving: develop, select, and apply problem-solving strategies 	1. express and manage their feelings, and show understanding of the feelings of others, as they engage positively in mathematics activities
2. recognize sources of stress and cope with challenges	<ul style="list-style-type: none"> • reasoning and proving: develop and apply reasoning skills (e.g., classification, recognition of relationships, use of counter-examples) to justify thinking, make and investigate conjectures, and construct and defend arguments 	2. work through challenging math problems, understanding that their resourcefulness in using various strategies to respond to stress is helping them build personal resilience
3. maintain positive motivation and perseverance	<ul style="list-style-type: none"> • reflecting: demonstrate that as they solve problems, they are pausing, looking back, and monitoring their thinking to help clarify their understanding (e.g., by comparing and adjusting strategies used, by explaining why they think their results are reasonable, by recording their thinking in a math journal) 	3. recognize that testing out different approaches to problems and learning from mistakes is an important part of the learning process, and is aided by a sense of optimism and hope
4. build relationships and communicate effectively	<ul style="list-style-type: none"> • connecting: make connections among mathematical concepts, procedures, and representations, and relate mathematical ideas to other contexts (e.g., other curriculum areas, daily life, sports) 	4. work collaboratively on math problems – expressing their thinking, listening to the thinking of others, and practising inclusivity – and in that way fostering healthy relationships
5. develop self-awareness and sense of identity	<ul style="list-style-type: none"> • communicating: express and understand mathematical thinking, and engage in mathematical arguments using everyday language, language resources as necessary, appropriate mathematical terminology, a variety of representations, and mathematical conventions 	5. see themselves as capable math learners, and strengthen their sense of ownership of their learning, as part of their emerging sense of identity and belonging
6. think critically and creatively	<ul style="list-style-type: none"> • representing: select from and create a variety of representations of mathematical ideas (e.g., representations involving physical models, pictures, numbers, variables, graphs), and apply them to solve problems • selecting tools and strategies: select and use a variety of concrete, visual, and electronic learning tools and appropriate strategies to investigate mathematical ideas and to solve problems 	6. make connections between math and everyday contexts to help them make informed judgements and decisions

Resources

Curriculum and Resources

Curriculum ▾

Program Planning ▾

Assessment and Evaluation

Parents

Welcome, parents!

Resources to support your child's learning



Parents*1 can make a big difference in their child's learning by talking with them about what they are learning at school.

In addition to talking with their child about their learning, parents and families can support their child's success by finding ways to make a connection between what is being learned at school and outside the classroom, so that their child can apply their learning at home, at school and beyond.

We invite you to visit this site regularly – as we add new digital versions of the Ontario curriculum in all subjects and grades, more pages will be available here.



A parent's guide to Mathematics, Grades 1–8 (2020)

Developed by the Ontario Ministry of Education

Understand your child's learning



What is Curriculum?



Transferable Skills



Assessment and Evaluation

Resources

B. Number



Why is my child learning this?

Why is my child learning this?



B. Number

Students work with numbers up to 10,000 and are introduced to decimals. They learn how decimal numbers are used in life, such as taking a person's temperature on a thermometer and when making and recording precise measurements. Students will begin to divide two- and three-digit whole numbers by one-digit whole number and are expected to know multiplication facts from 1×1 to 10×10 . They also begin to solve problems that require more than one operation with whole numbers.

For informational purposes only, not part of official issued curriculum.

The dos and don'ts of raising a confident math learner

Don't:

Engage in negative self-talk

Instead:

Praise them for continuing to
work on something even
when it is hard

The dos and don'ts of raising a confident math learner

Don't:

Tell your child, “I don't understand how your teacher did this, so I am going to show you how I learned to do it”

Instead:

- Seek out resources that will help you better understand until you feel confident that you can help them
- model that it is ok not to know something
- Help them articulate questions they can ask their teacher

The dos and don'ts of raising a confident math learner

Don't:

Reward or compliment your child's "smartness"

"You got it! I told you that you were smart"

Instead:

Praise effort

"I like the way you tried all kinds of strategies on that math problem until you finally got it"

Foster the Joy of Math

Play Mathy Games



Do Some Math Before Bed



SUDOKU

2	9			6	
4	8	7			1 2
8			1 9		4
3	7			8	1
6	5			8	3
1			3		7
			6 5	7	9
6		4			2
8		3	1 4	5	

40x	4+		3-		3-
		20		20	
7+		2-			2-
10x		3-		3-	
80x		2-			2-
	3+		11+		

