

Working Group 2

If not calculus, then what and how?



Miroslav Lovric (McMaster), Olive Chapman (Calgary),
Jana Archibald (Lethbridge), Shawn Desaulniers (Alberta),
Indy Lagu (Mount Royal), Jerrod Smith (Calgary), Shannon
Ezzat (Cape Breton), Amenda Chow (York)

Teaching Math in 2030

A shift in perspective for first year...

- Focus on helping students develop skills (*over specific content*)
- Invite university students to discover what math really *is*
- Calculus (as it is taught now) is too dense to accomplish this

First Year Math Courses in 2030

We want our future first-year students to learn to ...

- Employ logical reasoning
- Ask good (mathematical) questions
- Develop problem solving strategies
- Communicate mathematically
- Think critically / mathematically / quantitatively
- Explore proof versus evidence
- Identify authentic applications
- Engage in productive struggle
- Develop metacognitive awareness of their learning

Be inspired, have fun, find joy!

First Year Math Courses in 2030

Pick from suitable content modules such as ...

- History of mathematics
- Logic puzzles
- Probability
- Data visualization
- Voting systems
- Personal finance
- Discrete mathematics
- Linear algebra
- Number theory
- Geometry
- Ethnomathematics
- Modeling
- Coding / computing
- Using technology ethically
- Anything else that you love ...
(like calculus!)

Our students in 2030

A course for everyone!

- Low-floor High-ceiling approach
 - Floor: approx. grade 10 mathematics
 - Ceiling: topics that allow exploration at many levels

Math Curriculum in 2030

MATH 007 - < Insert amazing title here >

(What is it? “Introduction to Mathematics”)

Students will develop knowledge, skills and attributes of mathematics as a human activity. This includes learning and doing mathematics through problem-solving, problem-posing, and exploration in a variety of mathematical and statistical contexts. Throughout this course, students will develop inspiration and joy.

So, what will 2030 look like?

- *This course will never happen...*
- *Unless we crowdsource, get grants, get course releases...*
- We hope you can bring some helpful ideas to your home institution.
- We don't have the answers. It's an exploration.

Questions? and Discussion!

