President's Message

The Mathematics Council and the Science Council are hard at work planning our second joint conference, to be held in Edmonton in October. We are proud to offer such a great professional development opportunity to all our teachers. Jo Boaler, a mathematics education professor at Stanford University and the faculty director of youcubed, will be our math keynote speaker, and she will also present an afternoon workshop. Lots of breakout sessions will be available for math and science at all grade levels.

We are now accepting speaker proposals. For more information, please visit our website (www.mathteachers.ab.ca). We'd love to have you share your passion and expertise.

Thank you to all our teachers who are representing us in the curriculum rewrite and review sessions. We appreciate your dedication.

We are excited that two of our council members were accepted to present at the National Council of Teachers of Mathematics (NCTM) annual conference in April. Congratulations to David Martin and Sandi Berg! I hope that some of our members made it out to Washington, DC, to hear them speak and to enjoy an amazing conference.

Finally, our Spring Symposium was held May 4 in Red Deer. We spent the day with Dan Finkel, founder of Math for Love, learning about extraordinary math.

Thanks, teachers, for all your hard work learning, teaching and inspiring students to love math!

Alicia Burdess

From the Editor's Laptop

We know that math is beautiful and creative, but how can we show that to our students? Check out "What Is Mathematical Beauty? Teaching Through Big Ideas and Connections"—especially all the big ideas for K–8.

The article, written by Jo Boaler, Jen Munson and Cathy Williams, is available at https://bhi61nm2cr3mkdgk1dtaov18-wpengine.netdna-ssl.com/wp-content/uploads/2017/11/Big-Ideas-paper-12.17.pdf.

Happy reading!

Stacey Wu

Geeks Unite 2.0: 2018 Math and Science Joint Conference

Come join the Mathematics Council and the Science Council in celebrating our second joint conference—Geeks Unite 2.0. The conference will be held October 19 and 20, 2018, at the Delta Hotel and the Radisson Hotel in Edmonton.

The keynote speakers will be Jo Boaler (a professor of mathematics education at Stanford University and the faculty director of the math education website youcubed) and Jill Heinerth (a Canadian cave diver, underwater explorer, writer, photographer and filmmaker). A panel discussion —"Education in the Era of Fake News"—will follow.

For more information, go to https://event-wizard .com/GeeksUniteMathScience2/0/welcome/.

Save the Date!
Fall 2018 Symposium

Keep October 18 open for the preconference symposium! Lucio Gelmini (Dr Boom), an assistant professor of chemistry at MacEwan University, will be showcasing his travelling science show in the morning. In the afternoon, participants can either tour the University of Alberta's National Institute for Nanotechnology (NINT) or attend the Ed Camp "unconference."

October 18–20, 2018
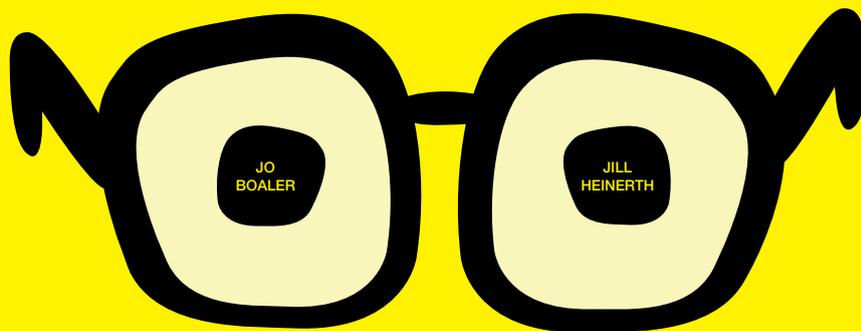
WORLDS WILL COLLIDE

Joint conference of the **Mathematics Council** and the **ATA Science Council**

FEATURING JO BOALER,PROFESSOR OF MATHEMATICS EDUCATION, AUTHOR OF MATHEMATICAL MINDSETS

mathteachers.ab.ca

FEATURING JILL HEINERTH, EXPLORER-IN-RESIDENCE,THE ROYAL CANADIAN GEOGRAPHICAL SOCIETY

sc.teachers.ab.ca

Fine print: we anticipate that this conference will sell out. Register early to avoid disappointment. Registration links will be on both councils' websites.

REGISTER AT bit.ly/GeeksUnite2

PEC Report

Happy 100th birthday to the ATA! The theme this year is "Learn from the past. Inspire the future."

Let's think about the future and its impact on the teaching of mathematics. Teachers must continue to be free to use their best judgment to do what is best for their students. Teachers know that conquering basic skills will help students progress in the study of mathematics. But they also know that understanding and thinking mathematically are so much more than regurgitating memorized facts. We must fight against any infringement by special interest groups, the media or the government on the professional autonomy of our teachers.

Curriculum development continues, with K–4 the current focus. The ATA is a partner in this process, and there are some exciting developments. The curricula for all subject areas will have a similar design and layout. The online platform for grouping units and enabling cross-curricular outcomes looks interesting. The ability to share plans with other teachers will facilitate collaboration. However, we must insist on adequate field testing and resource development before the implementation process.

The official celebration of the 100th anniversary of the ATA will take place at the Annual Representative Assembly (ARA) over the long weekend in May. ARA is also a great opportunity to witness the democratic nature of the ATA. The 425 delegates are selected by their locals to attend. These delegates debate resolutions, set policy, scrutinize the budget and set the membership fee for the coming year. This year delegates will gather in Calgary.

*Katherine Pritchard*

Contribute to *delta-K*

Do you have a practical teaching idea or thoughts about mathematics education you could share with other mathematics teachers? The Mathematics Council journal, *delta-K,* is looking for teacher submissions.

Writing an article for *delta-K* is something you could include in your yearly professional growth plan. At the same time, you would be contributing to the profession by sharing with others.

Please consider submitting a lesson plan, an activity, a book review, a rich task or a research paper, or simply sharing something that worked in your classroom so that other math teachers can try it. Our collaboration can enrich all our students' math experiences.

Send your submission to lboschman@mhc.ab.ca. See your idea in print!

Lorelei Boschman
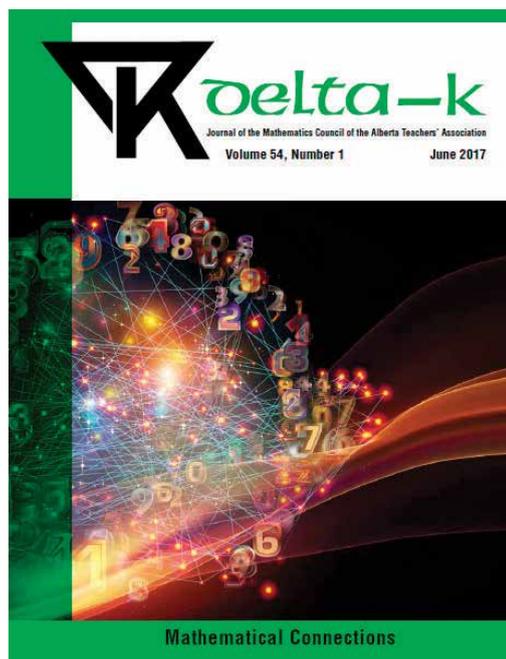
The Flaws of (Some) Textbooks

This piece is shared here to provide an interesting perspective on the use of mathematics textbooks, but it does not represent the official views of the Mathematics Council.

Recently, I was asked, "Why do you dislike textbooks?" Upon reflection, here are the problems I see with textbooks.

Problem 1: Textbooks Tell Students What to Do

Textbooks assume that students need to be taught and shown how to solve a problem before they are given the problem.

This is absurd to me. When I (and probably most people) encounter something I don't know how to do, what I rarely do first is look for an instructional video on how to complete the task.

Rather, the first thing I do is play with the problem and see how far I can get without any assistance. That's right—I play! This play cannot happen if my hand is being held and I'm being shown how to complete the task.

Learners—especially children—are not afraid to be wrong, to take chances and to try to truly problem solve. Yet a textbook is designed around the idea that a child loves to be told what to do.

This ruins the fun! I'll say it again—this ruins the fun! It is comparable to turning on a movie and having someone tell you that the main character dies at the end. Joy lost!

Problem 2: Textbooks Provide Pseudo-Context

In almost every textbook is some sort of situation that can exist only in Textbook Land.

Only in Math class... can you buy 72 watermelons and no one asks why?
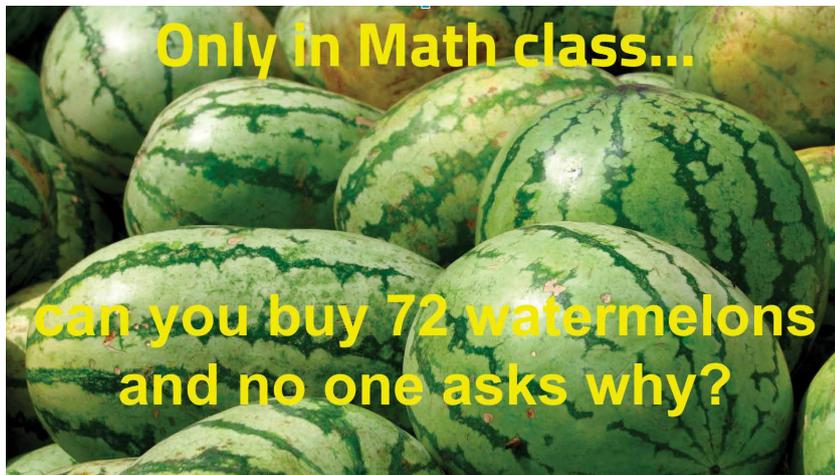
Textbooks usually give students all the information, in the order they need it, and then call it problem solving.

My favourite student response came about from the following question in a textbook:

Jason weighed a fish and found out that if you took the weight of the fish and added it to half the weight, the result is 20 lbs. How much does the fish weigh?

The student exclaimed, "Ask Jason. He weighed the damn thing!"

Brilliant response to a horrible question!

Problem 3: Textbooks "Unitize" Learning

Again, a common problem I see with textbooks is that they assume that students need to learn A, then B and then C in order to master D. In my experience, creating these disjointed learning situations, or what I call "silos of learning," causes problems for students.

A common practice in textbooks is the use of chapter tests. The pages that follow these tests have little or nothing to do with what came before. In essence, the learning that happened yesterday will have nothing to do with tomorrow.

A great practice is to weave essential learning outcomes throughout your entire course. This contradicts the textbook. If you feel that a certain outcome is important for all to master, have your students work with that idea throughout the entire course rather than working with the idea for a finite time (such as a week or a month) and then moving on and never relating new learning to previous learning.

Disclaimer

Does this mean that I don't think textbooks belong in schools? *No!*

This means that educators must be aware of the shortcomings of textbooks. We must remember that these resources were created, usually in an office, to be sold across an entire country or even continent. They were not designed for your kids—or anyone's kids, for that matter.

Textbooks should be used similar to how encyclopedias are used in the classroom—as reference material. If students are struggling with a concept, give them a textbook, show them a specific page, and advise them to complete some (but not all) of the questions. When they are done, have a conversation about the questions and then ask them to return the textbook to the classroom shelf.

David Martin

MCATA Awards and Grants

MCATA Grants

Grants of up to $500 are available to teachers who organize professional development initiatives that support current teaching or learning practices, as well as priorities for PD outlined by Alberta Education, MCATA, the NCTM, the ATA or local school districts. For more information and an application form, go to http://mathteachers .ab.ca/mcata-grants.html. The deadlines for application are **May 1** and **December 1** of each year.

Dr Arthur Jorgensen Chair Award

The Dr Arthur Jorgensen Chair Award is presented to a third- or fourth-year education student studying in Alberta who promotes mathematics education. For more information and an application form, go to http://mathteachers.ab.ca/dr.-arthur-jorgensen-chair-award.html. The deadline for applications is **April 30** of each year.

Alberta Mathematics Educator Award

The Alberta Mathematics Educator Award is presented to a teacher who has made exceptional contributions to mathematics and has demonstrated leadership at the school, district, provincial or national level. For more information and a nomination form, go to http:// mathteachers.ab.ca/alberta-mathematics-educator-award.html. The deadline for nominations is **August 1** of each year.

Publishing Under the *Personal Information Protection Act* (PIPA)

The Alberta Teachers' Association (ATA) requires consent to publish personal information about an individual. *Personal information* is defined as anything that identifies an individual in the context of the collection: for example, a photograph and/or captions, an audio or video file, artwork.

Some schools obtain blanket consent under FOIP, the *Freedom of Information and Protection of Privacy Act*. However, PIPA and FOIP are *not* interchangeable. They fulfill different legislative goals. PIPA is the private sector act that governs the Association's collection, use and disclosure of personal information.

If you can use the image or information to identify a person in context (for example, a specific school, or a specific event), then it's personal information and you need consent to collect, use or disclose (publish) it.

Minors cannot provide consent and must have a parent or guardian sign a consent form. Consent forms must be provided to the Document Production editorial staff at Barnett House together with the personal information to be published.

Refer all questions regarding the ATA's collection, use and disclosure of personal information to the ATA privacy officer.

Notify the ATA privacy officer immediately of *any* incident that involves the loss of or unauthorized use or disclosure of personal information, by calling Barnett House at 780-447-9400 or 1-800-232-7208.

Maggie Shane, the ATA's privacy officer, is your resource for privacy compliance support.
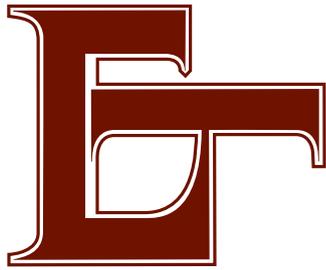
780-447-9429 (direct)

780-699-9311 (cell, available any time)

The ATA Educational Trust

Supporting teachers' professional learning, research and resources

Dr B T Keeler Continuing Education Bursaries

Each year in June, the Trust draws the names of 30 (or more) certified teachers who apply for bursaries to enroll in courses in the area of their specialization in the upcoming summer or school year.

Application deadline: May 1

ATA Specialist Council Conference Grants

Each year in October, the Trust awards 30 (or more) grants to teachers and others to assist with expenses associated with attending ATA specialist council conferences or events.

Application deadline: September 30

Current Trust Programs

$1,000 Orest and Francina Lazarowich Bursary in Technology Education to be offered to a third-year education student enrolled in the University of Alberta's CTS program

Offered through the University of Alberta

How to Apply

- Go to the Association's website (see below).
- Read the information for the grant or bursary that you are considering and download the appropriate application form or instructions. (Application forms are posted in January.)
- Complete the application, sign it and mail it to the Trust administrator. Note application deadlines.

To donate to the Trust, visit www.teachers.ab.ca and click on My ATA > Programs and Services > Grants, Awards and Scholarships > ATA Educational Trust.
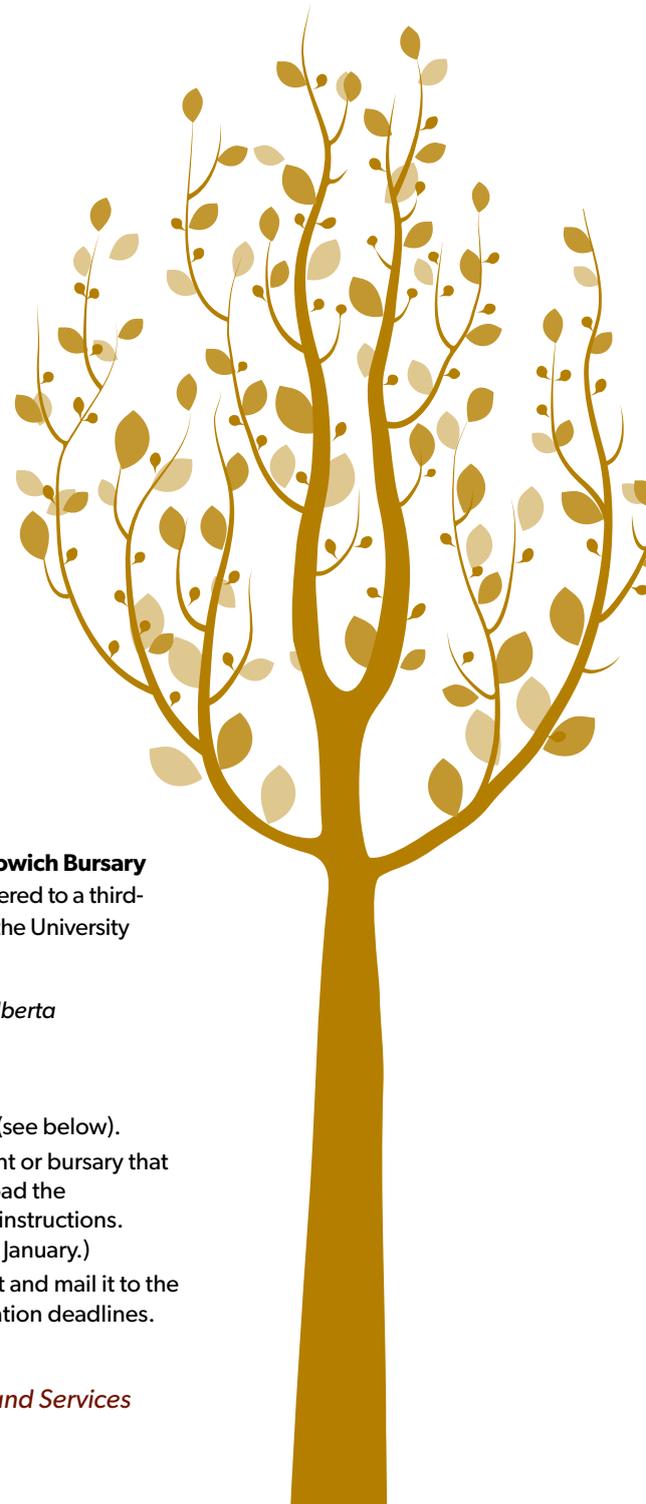
Since 1978, the Trust has awarded over $1,000,000 in grants and bursaries

Celebrating a colleague's successful career in education? **Consider donating to the Trust!**