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Submission of Articles
The Ontario Mathematics Gazette (OMG) is looking for news items, articles, and good ideas that are useful to mathematics teachers and mathematics teacher education. We are seeking submissions, preferably from mathematics teachers K–12 and other mathematics education professionals, that describe innovative and creative approaches to mathematics teaching.
Please keep in mind the following criteria when making submissions to the OMG:

- The ideas/activities must be of interest to the readership.
- The ideas/activities must be fresh and innovative.
- The mathematics content must be appropriate for the readership.
- The mathematics content must be accurate.
- The article must be well written and easily understood.
- The article and its ideas must be free of sexual, ethnic, racial, or other bias.
- The article must not have been previously published, nor should it be out for review by other publications.
- The article must be original.

Articles must be word-processed in MS Word, double-spaced with wide margins, not exceeding 10 numbered pages of text, and prepared according to the Publication Manual of the American Psychological Association, Sixth Edition. Figures and diagrams should be drawn by computer, if possible, or drawn in black ink in camera-ready form. Embedded images must also be submitted separately in jpg or tif format. Proof of the photographer’s permission is required, and for photos of students under the age of 18, the written permission of a parent or guardian is required.

You must submit one complete copy of your article, embedded with any tables, figures, and captioned photographs or graphics, to the Editor, Dan Jarvis, along with separate files for each of the text, graphics, and/or photographs. Please e-mail all files to Dan Jarvis at dan.jarvis@oame.on.ca.

Your name should not appear anywhere in your article, including websites, so that your article can be sent out for blind review. Your name, full mailing address, and e-mail address must be included on a separate sheet. Upon review, you will be notified as to whether your article has been accepted for publication (as is, or pending minor or major revisions) or rejected.

The Editor reserves the right to edit manuscripts prior to publication. Once an article is published, it becomes the property of OAME.

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Welcome back to school/college/university and to another academic year of mathematics teaching and learning that lies before us—one full of potential in terms of efforts to improve our reflective practice.

When one packs up and heads out on an adventure during one’s scheduled holiday time, it is known as a **vacation**. Alternately, if one forgoes the busyness of planning and travelling altogether, one might instead decide to remain at home, this situation commonly being referred to as a **staycation**. However, if one decides to tackle one or more major home improvement projects during one’s break, we could perhaps refer to this experience as a **renova***(ca)* **tion**?! Maybe you’ve taken part in one of these recently?! For us, it involved long overdue hardwood floor refinishing this past summer. Thanks to multiple YouTube “how to…” videos (isn’t this a remarkable teaching/learning tool?!), a number of helpful local haberdasher employees, and some very long and dusty/toxic work periods, we were ultimately able to successfully accomplish this exciting and terrifying task with satisfactory (for us at least) results.

In 2006, I had the opportunity, along with a number of fellow Canadian math education researchers, to attend and participate in the 17th International Commission on Mathematical Instruction (ICMI) conference in Hanoi, Vietnam entitled *Mathematics Education and Technology—Rethinking the Terrain*. Dr. Seymour Papert, renowned mathematician, computer scientist, and former Lego Professor of Learning at Massachusetts Institute of Technology (MIT), delivered a fascinating keynote address, and later that day was involved in a near tragic accident, wherein he was hit by a motorcycle while walking back to the hotel from the university. Papert has accomplished many things during his long career, including being one of the pioneers of...
artificial intelligence, and a co-inventor, with Wally Feurzeig, of the Logo programming language. For me, one of Papert's most intriguing concepts is that of “hard fun,” which he discusses in the following excerpt:

The first [big lesson I have learned from computer games], which I have already noted, is echoed by kids who talk about ‘hard fun’ and they don’t mean it’s fun in spite of being hard. They mean it’s fun because it’s hard. Listening to this and watching kids work at mastering games confirms what I know from my own experience: learning is essentially hard; it happens best when one is deeply engaged in hard and challenging activities. The game-designer community has understood (to its great profit) that this is not a cause for worry. The fact is that kids prefer things that are hard, as long as they are also interesting. The preoccupation in America with ‘Making It Easy’ is self-defeating and cause for serious worry about the deterioration of the learning environment. (Papert, 1998, p. 89)

In both the hardwood and hard fun scenarios described above, there appears to be this sort of balance of (or tension between) mystery and mastery which often serves to generate a very positive context for new learning. Soviet psychologist and educational theorist Lev Vygotsky’s definition of his Zone of Proximal Development (ZPD) presents us with a powerful and related idea: “[The ZPD is] the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers” (Vygotsky, 1938/1978, p. 86). Hard fun is not accidental or happenstance; rather, it is carefully orchestrated, monitored, and revised by teachers of mathematics as they daily define the ZPD for individual students, and for their class as a whole.

The September 2015 issue of the Gazette includes three articles, nine regular columns, the Abacus insert, and several special features.

In his article Thinking about Teaching, Learning, and Mathematical Mindsets Leads Me to Learning Skills, author Jamie Pyper discusses growth mindsets and habits of mind, and also highlights a learning skills rubric that he has developed for student assessment.

Co-chairs Melissa Black and Linda LoFaro contribute a full report of the Ontario Mathematics Olympiad (OMO) 2015 competition, including photos of the organizing team, candid student shots, and the winning student team.

And finally, in Meth Devendra’s Exponential Function and Tangents, he demonstrates how a single common tangent line to two given functions can be achieved, using several distinct examples.

Regular columns include the following highlights: OAME President, Tim Sibbald (President’s Message), shares his inaugural President’s Message; Assessment Abby (eponymous) answers a submitted question regarding teachers’ communication with parents/guardians; Mary Bourassa (Technology Corner) highlights the online resource known as the Mathematics Assessment Project (MAP); Carly Ziniuk (temporarily replacing Mirela Ciobanu as a guest columnist for the In the Middle column—thank you, Mirela, and welcome aboard Carly!) presents a sample math investigation focusing on the Pont des Arts pedestrian bridge in Paris, which has garnered international attention regarding the symbolic and controversial love padlocks placed on its side rails; and Greg Clarke, Agnes Grafton, Ross Isnegger, and Markus Wolski (Provincial Digital Learning Resources) discuss e-mail list notifications, images in Notepad, partitioning sets tool, and wiki supports.

Lynda Colgan (Hey, It’s Elementary) delves into forensic anthropology and how mathematics is used by experts to identify bone remains; Shawn Godin (What’s the Problem?) elaborates on the previous tiling problem and poses a new puzzle regarding buried pirate treasure; Ann Kajander (Mb4T) looks at how to introduce students to integers; and Todd Romiens (OAME/NCTM Report) shares some ideas around stimulating a child’s curiosity and also how parents/guardians can be involved in their child’s math learning. As usual, this issue also features the rich contribution of ideas for elementary math teaching as found in the Abacus insert, co-edited by Mary Lou Kestell and Kathy Kubota-Zarivnij, and focusing here on equivalence and relational thinking.

Volume 54 Issue 1 also includes several special features: the 2015 OAME Awards recipients; a review by Tim Sibbald of Richard Hoshino’s book, The Math Olympian (2015); Ontario mathematics education researcher profile highlights; and the several more Canadian mathematics education researcher excerpts from within Lerman’s Encyclopedia of Mathematics Education (2014).

Hard times ahead, perhaps, for some of our elementary, secondary, and tertiary teaching colleagues in terms of collective agreement negotiations and related
actions in Ontario schools and universities. In the midst of that potential turmoil may we each be mindful of hard fun and hard-wood type new learning as we continue to challenge our students and ourselves, respectively.

References

OAME AWARDS SUMMARY 2015

Secondary School Department Award for Exceptional and Collaborative Mathematics Teaching – Upper Canada College
The committee was unanimous in its selection of Upper Canada College (UCC). Many of UCC’s initiatives to engage students are truly innovative (student generated: e.g., created an invitational math contest; reached out to inner-city schools involving test design and lectures; also, math dragons podcasts). It was particularly noteworthy that the UCC group’s undertakings were truly a team effort, with considerable leadership by example.

Award for Exceptional and Creative Teaching in Elementary Mathematics – Najwa Chalabi
The committee recognized the significance of Najwa Chalabi’s nomination from a student, and the succeeding nominations resulting from this beginning. She was particularly recognized for her innovation and creativity in the classroom, and development of students through her involvement in a diverse number of activities, not just in the mathematics classroom.

Award for Exceptional and Creative Teaching in Secondary Mathematics – Heather Theijsmeijer
Heather Theijsmeijer was recognized for her creativity and innovative strategies in the classroom. Not content with success, it was clear she is a reflective practitioner, who is constantly looking for even more effective strategies, including technology (e.g., BYOD). Heather has a portfolio with a huge spectrum of subjects taught, interests, and approaches to learning. It is highly evident she is trying as many things as she can to keep students from falling through the cracks.

OAME/AOEM Life Membership Award – Bill Otto
Bill Otto was the runaway selection for this year’s award in this category. His many, varied contributions over his long-time involvement with OAME are self-evident and collectively speak for themselves in the high-quality operation of OAME.