

# BUILDING BETTER MATH: YOUR HELP IS NEEDED

MATHEMATICS  
DEPARTMENT

SCHOOL OF COMPUTING  
& ACADEMIC STUDIES

[bcit.ca/bettermath](http://bcit.ca/bettermath)



## We're building a database of applied math problems

### THE PROBLEM

Many high school students are avoiding math and cutting off pathways to exciting technical careers before they even know about them. Additionally, our high school demographic is shrinking – we just don't have as many students graduating with the math skills they need. Students who don't engage with math in the high school years are a loss for all of us – both socially and economically.

Grade 11, 12 (including the new Western Canadian curriculum) and adult mathematics programs have few, if any, "real-world" applied problems. Parents and teachers alike have heard the question "why do I need to learn this?" Concept by concept, it is frequently difficult to come up with a convincing answer.

### OUR SOLUTION

We're developing an online database, tied to the high school curriculum, of real-world math problems. We expect these rich and broad applications to the many fields of science, health, engineering and technology, will encourage and even inspire students to consider and explore careers in science and technology.

High School Mathematics teachers flocked to our demo at their annual fall conference this past October. Survey results strongly indicated that this tool "fills a huge gap in math education."

BCIT's Math Department has had great success using real life, technology-specific applications to engage post secondary students in the art of mathematical problem solving. We feel confident that this success, excitement, and interest in mathematics can be transferred to younger students.

The database software, Maple TA, has been well received in BCIT Math classes for several years. The online system can grade the work and provide instant feedback, 24/7, and students have the opportunity to try an unlimited number of different problems on a particular concept. All questions are designed by professionals with expertise in a myriad of fields, and will help clarify and cement concepts teachers have covered in class lessons.

Our Mathematics Department is ideally suited to develop the content for such a project; we are a Mathematics Department like no other in the country. Our Department members have extensive backgrounds in physics, chemistry, computer systems, aerospace, mechanical, biomedical, electrical, civil and quality engineering; we know how to apply math. **However, we still need more workplace problems.**

Please read on to see how you can help...



*Students need to know why something is worth learning, how it connects to the real world, and why it makes sense.*

*Our Department is taking up this challenge using Maple TA.*

**FOR MORE INFORMATION OR TO SUGGEST A MATH APPLICATION:**

[bettermath@bcit.ca](mailto:bettermath@bcit.ca)

**FINANCIAL DONOR OR SPONSOR SUGGESTIONS**

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## HELP US FIND APPLIED EXAMPLES

We have many math problems for the database, but need more. Do you or your contacts have any real world problems that you can share using the high school mathematical concepts listed below?

- > Algebra
- > Functions and Graphing
- > Geometry
- > Logarithms and Exponents
- > Trigonometry

Please contact us if you would like to contribute an applied math problem.

## HELP US FIND DONORS AND SPONSORS

We have funds to complete 30% of our project, and are looking for additional funds. We need donors who support this mission, or sponsors who wish to have their industry, or even company, included in the database examples. In order to further interest in specific careers and industries, questions can link to career information and math training required for actual kinds of jobs, or areas where we know we face – or will soon face – a skills shortage.

**Please let us know if you – or someone else in your industry – may be interested in this project.** With applied examples from your industry, Building Better Math can be a sophisticated recruitment tool. Showcase your sector for students who are choosing career paths!

## PROJECT HISTORY

We know there is strong interest in industry and government for projects like this. Specific recommendations in improving K-12 education in the December 2010 report from the Premier's Technology Council, *A Vision for 21<sup>st</sup> Century Education*, support this kind of enhancement to high school education delivery. The government has also highlighted the need for online resources to meet the needs of our vast province, and stressed the importance of learning problem solving skills – as opposed to pre-determined content – for our learners to stay competitive in the global economy. As emphasized by the fall 2010 provincial government Labour Strategy report, Skills for Growth, "increasing participation in science based education and technology to support British Columbia's growing knowledge based economy will be critical."

We hope you will work with us to build better math!



*What high school math teachers have told us about this project:*

*“This fills a huge gap in math education.”*

*“It makes students think out of the box and talk about how they found the solution.”*

*“Having examples from science, forensics, fishing and medical increases my interest which I know can increase students’ interest.”*

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