

# stepping it up

FOUNDATIONS FOR  
SUCCESS IN MATH



**One-third of college students  
are at risk of failing!**



## Dear Math Educator:

**W**e are excited to announce the upcoming release of a groundbreaking project in college math education. Called *Stepping It Up: Foundations for Success in Math*, this endeavour is intended to bridge the gap between high school and college math.

When pedagogically rich resources from Pearson Canada are combined with expert direction from college math educators, the result is a teaching tool that will change the way math is taught (and learned) in college. We're thrilled to be a part of that change and we suspect that you'll feel the same way.

This project is all about bridging the gap. Time and again, instructors have identified a significant “gap” between high school applied math education and college math education. This gap exists in the content coverage and pedagogical style students have experienced. The *College Mathematics Project 2007 Final Report*<sup>1</sup> states that up to one-third of students currently enrolled in the Ontario college system are at risk of not completing their programs as a result of their poor achievement in first-semester mathematics. Attaining strong student achievement under these circumstances can be challenging—colleges need flexible resources to help students learn the math required to succeed in their courses.

The unique challenge of addressing this gap called for a novel approach. We began by bringing together math educators from several Ontario colleges to form an editorial advisory board. Using the Ontario College Heads of Math position paper on assessment<sup>2</sup> as a starting point, the Pearson math team collaborated with the board to create a list of topics and learning objectives. Together, we then determined what kind of pedagogy and assessment works best across a number of programs and for a variety of learning styles. The result is a resource that is modular, focuses on the topics identified as essential for student success, incorporates Canadian examples (including SI units where appropriate), and breaks the mould set by traditional textbooks!

We are pleased to deliver an adaptable “bridging” solution for the students who need remediation the most. Available through Pearson's Custom Database Library, *Stepping It Up* offers flexible delivery of printed content, in addition to an eText and responsive online homework and tutorials in the form of MyMathLab. We are confident that *Stepping It Up: Foundations for Success in Math* is the best solution available to ensure student retention and improve student success in the college system. We always want to hear from instructors so please feel free to email us your questions or comments.

### **Let's help students bridge the gap!**

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<sup>1</sup> Schollen, Laurel, et al., *College Mathematics Project 2007 Final Report*. Toronto: York–Seneca Institute for Mathematics, Science and Technology Education, 2008.

<sup>2</sup> Heads of Math, *Math Assessment Testing Position Paper*. March 2009.

Pearson Canada

# INVESTS IN STUDENT SUCCESS

1

Pearson Canada learns that a gap exists between the math skills of high school graduates and first-year college students in Ontario. Based on discussions with Ontario Heads of Math and in consultation with the College Mathematics Project, Pearson Canada establishes the need for a remedial math solution for the Ontario college market.

2

Pearson Canada brings together leading college math instructors from across the province to form an editorial advisory board (EAB). This board is tasked with creating a solution to help students bridge the gap between high school and college math to promote math confidence for success in college. Six EAB members are heads of math in Ontario colleges. This group, named the College Entrance Math Group (CEMG), is augmented by an additional member, David Zimmer, to represent the high school perspective and broaden the group's knowledge and focus.

3

The CEMG chooses Tobey/Slater, *Basic College Mathematics*, for Canadian adaptation and adds modules on trigonometry and math skills. The group determines that this text best meets the level of rigour required for a remedial college math course.

4

Pearson Canada recruits four Canadian authors to work with consultants and the CEMG members on the new project, *Stepping It Up: Foundations for Success in Math*, with the goal to meet the needs of Ontario college students.

5

*Stepping It Up* modules are reviewed. Seventeen Ontario reviewers begin an in-depth vetting process to ensure that the content and format of *Stepping It Up* truly addresses its stated goals and reflects the curriculum taught in classrooms.

*“In my teaching, I have become aware of how my expectations of students’ mathematics knowledge differs from the skills they bring to college. College mathematics courses do not necessarily build on mathematics concepts taught in secondary school; rather, college mathematics courses are guided by the mandate of a program. As a result, gaps between mathematics taught in secondary school and college may exist. In addition, the language and mathematics symbols that are used at college are not always the same as ones students learn in secondary school. Working on this project has been an exciting venture for me as we can reflect on what these gaps may be and then incorporate the mathematics skills and language needed for success in college mathematics courses.”*

—Trish Byers (Georgian College)

### **College Entrance Math Group (CEMG) Members:**

Paul Wraight – Durham College  
Lauren Fuentes – Durham College  
Trish Byers – Georgian College  
Tom Fraser – Niagara College  
Nelly Faycal – Algonquin College  
Mohammad Hussain – Humber College  
David Zimmer

### **Stepping It Up Author Team:**

Mike Delgaty – Algonquin College  
Michael Nauth – Algonquin College  
Lisa Hayden – Algonquin College  
Trish Byers – Georgian College

### **Stepping It Up Consulting Team:**

Lauren Fuentes – Durham College  
Trish Byers – Georgian College

# STEPPING UP to meet the COLLEGE Math Project Recommendations

“Finally, a publisher that has listened to the experts and produced an effective and creative math teaching system that bridges the gap between high school and college mathematics...Bravo Pearson.”

—Richard Gruchalla (George Brown College)

*Stepping It Up* is designed to meet the recommendations of the College Mathematics Project—an ongoing research project funded by the province of Ontario to examine student math skills at the college level. Recommendations include:

## Integrate math into real-life situations

*Stepping It Up* contains Canadian examples and data to integrate math into real-life situations.

## Integrate technology into college mathematics courses

*Stepping It Up* has an accompanying MyMathLab online assessment program that contains diagnostic testing, guided solutions, a personalized study plan, an eText, and a gradebook.

## Ensure support placement early in the semester

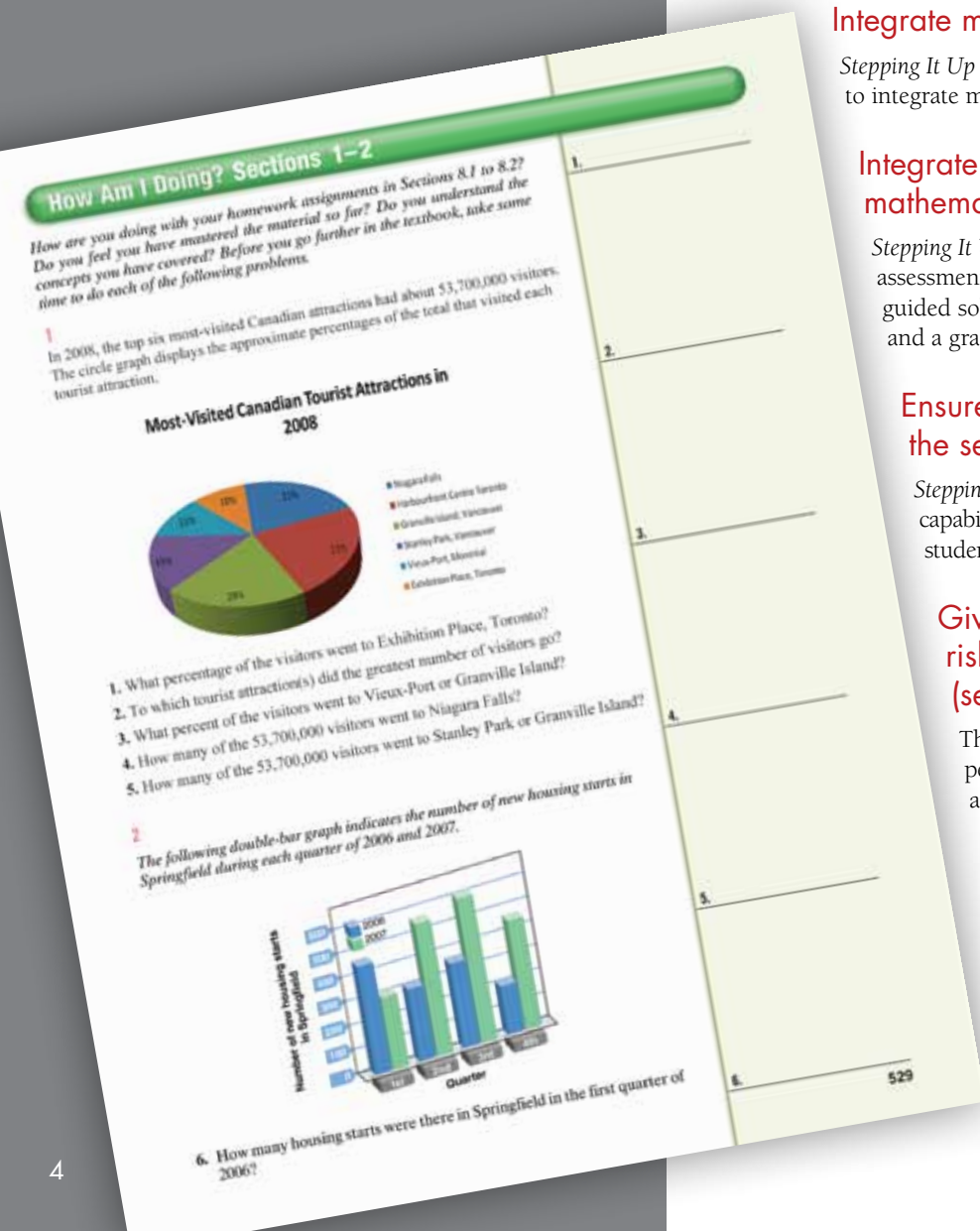
*Stepping It Up*'s MyMathLab online assessment capabilities include diagnostic testing. This allows students to identify their weaknesses early.

## Give students tools to self-identify risk and take responsibility (self-remediation)

The MyMathLab course also provides a personalized study plan that gives students an opportunity to self-remediate.

## Give students regular feedback

Students have access to hundreds of practice problems within MyMathLab that provide instant feedback. The MyMathLab gradebook allows instructors to see student progress and provide regular feedback to their students.



# STEPPING IT UP IS...

## ...MODULAR

**Stepping It Up** contains the following modules to address every topic identified as essential for student success in college. Mastery of these topics will build a solid foundation in math.

Math Study Skills

Whole Numbers

Fractions

Decimals

Ratio and Proportion

Percent

Measurement

Geometry

Statistics

Signed Numbers

Introduction to Algebra

Trigonometry

## ...COMPREHENSIVE

**Stepping It Up** includes the topics identified by the Heads of Math as being essential for student success in college, as outlined in the Heads of Math assessment paper:

### Numeracy

Whole number computation • Integer computation • Fraction computation system • Decimal computation • Order of operations

### Graphing

Algebraic expressions • Algebraic equations • Measurement: metric system • Geometry • Trigonometry

### Fraction-decimal-percent conversions

Number formats: scientific notation and significant digits • Percentages • Roots and radicals • Powers and exponents • Ratio and proportions

## ...FLEXIBLE

Create your own unique *Stepping It Up* package tailored to your students' needs by choosing one or more of the following components:

### Print

Create your own unique textbook that contains only the modules you need through the Pearson Custom Library.

### Online Homework

Use MyMathLab to give your students extra practice to achieve proficiency in core topics.

### eText

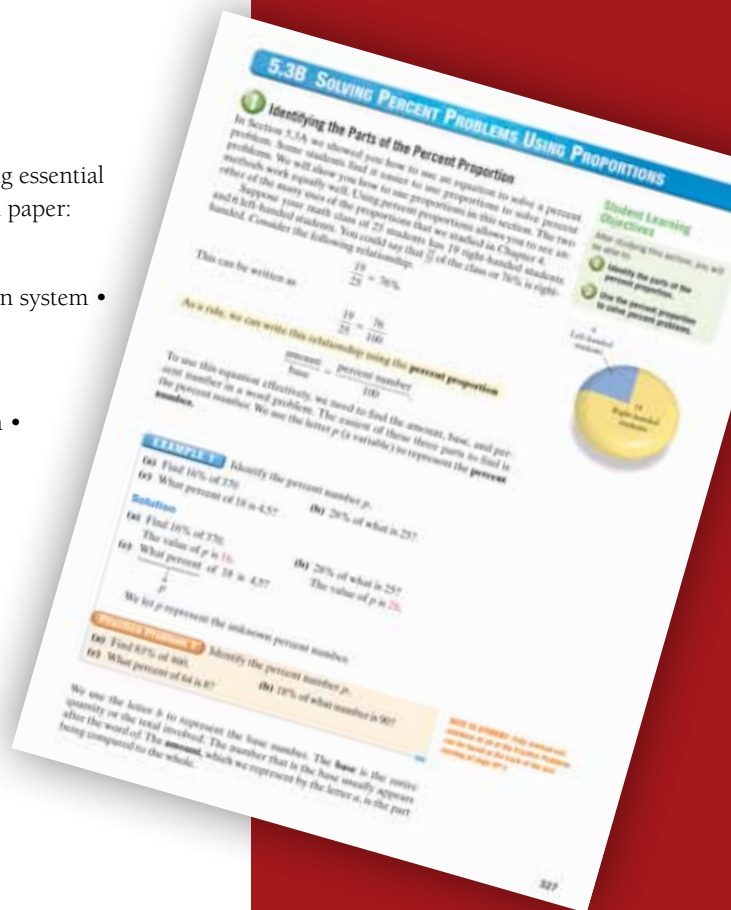
Through MyMathLab, you can select modules from a customizable eText based on the learning objectives of your course. You can match your eText to your customized print text. A MyMathLab access code can be packaged with your print text.

### CD

Students who don't have high-speed internet access at home can still practise with MathXL tutorials on CD. The CD can be packaged with your printed text.

*“Having a book that is modular and can be adapted as needed is a great advantage. Also having so many delivery options and resources is a plus.”*

—Lauren Fuentes  
(Durham College)



## Instructor Supplements

Instructor's Resource Manual

Instructor's Solutions Manual

PowerPoint® Lecture Notes

TestGen

*“Our goal at Durham College is to give students an opportunity to increase their math confidence, because it lays the foundation for their future success in college. Stepping It Up will enable me to streamline the delivery of my course and give students a chance to remediate where they need help the most.”*

—Paul Wraight (Durham College)

# Meet Our AUTHOR TEAM

## Mike Delgaty – Algonquin College

Mike is the primary author of the **Basic Math** modules. He holds a master's in theoretical physics from Queen's University and bachelor degrees in education and science from the Universities of Ottawa and Waterloo, respectively. He has taught physics, math, and science for the past 12 years in high schools in North Carolina and Ontario, and is currently an instructor at Algonquin College.



## Michael Nauth – Algonquin College

Michael is a coordinator for the carpentry program at Algonquin College. His knowledge of Canadian business and industry requirements adds a valuable practical perspective to the project.



## Lisa Hayden – Algonquin College

Lisa is the author of the **Trigonometry** module. She holds a double degree consisting of an honours in mathematics and a concentration in computer science at the University of Ottawa, and a Master's in pure mathematics with a specialization in abstract algebra (Simon Fraser University). Lisa is currently an instructor at Algonquin College.



## Trish Byers – Georgian College

Trish is the author of the **Study Skills** module. In addition to her nursing degree (University of Toronto), Trish has an undergraduate degree in mathematics and an MA in mathematics education for teachers from York University. Trish currently teaches in the engineering technology department at Georgian College and is pursuing a doctoral degree in education.



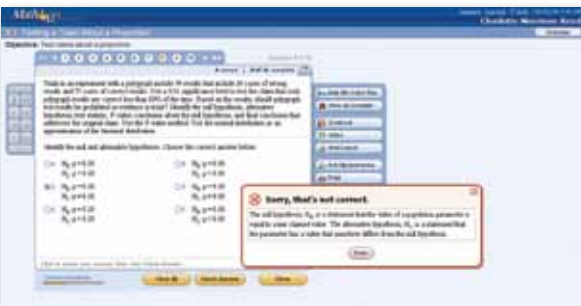
# Full MyMathLab SUPPORT



Technology is fully integrated into the college math course!



MyMathLab is an online learning system designed specifically to help students get a better grade in their math courses. With practice problems correlated to the textbook or teaching resource and personalized study plans generated from student answers, MyMathLab puts users in control of their own learning. Everything is available 24 hours a day, so students can study where they want, when they want, and how they want.



### Personalized Study Plan

A study plan is generated based on student results on sample tests and instructor assignments. Students can clearly see which topics they have mastered and, more importantly, which topics they need to work on!

### Practice Problems

Students use the study plan exercises to get practice where it is needed. They can check progress and get an overview of all scores.

### Help Me Solve This

When students are stuck on an exercise and don't know where to begin, they can see a walkthrough that demonstrates how to set and solve the exercise.

### Auto-Graded Tests and Assignments

MyMathLab comes with two pre-loaded Sample Tests for each chapter so students can self-assess their understanding of the material.

### eText

Pearson eText gives students access to the text whenever and wherever they have access to the internet. eText pages look exactly like the printed text, offering powerful new functionality for students and instructors. Users can create notes, highlight text in different colours, create bookmarks, zoom, click hyperlinked words and phrases to view definitions, and choose single-page or two-page view.



## Canadian Students Say:

*“This program helped me find out where my weaknesses are.”*

*“I especially loved the tutorial (help section) within the homework.”*

*“The interactive aspect of the website makes it more motivating to do math.”*



# stepping it up

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*“The main advantage is that Stepping It Up is Canadian, and designed specifically to implement the recommendations of the College Math Project. I personally know Trish Byers (one of the authors), who is very passionate about college math education in Ontario. There is strong support amongst college math faculty for a product to bridge the gap.”*

*—Melanie Christian (St. Lawrence College)*

For more information, contact your local Pearson representative, our Faculty Sales & Services team at 1-800-850-5813, our website at [www.pearsoncanada.ca](http://www.pearsoncanada.ca), or email [steppingitup@pearsoned.com](mailto:steppingitup@pearsoned.com).

