

Teacher's a plus for math students

By Kim Zarzour Toronto Star

If there were a mathematics hall of fame, Willowdale teacher Charles Ledger would have earned a berth in it.

He has developed a winning formula for teaching math that has earned his students some spectacular successes during the school year.

And although his mathematics team — students in Zion Heights Junior High School's gifted program — may half-jokingly call him "the slave driver," they can't dispute their coach's success.

This year, Ledger's students won every contest they entered — the North York math contest, the provincial math contest, two national contests and a first place tie in the Atlantic-Pacific International Math Contest in May.

His method of teaching is now being field-tested for use in other classrooms. Recently, Ledger and Kingslake Public School teacher Margaret Tierney received the Claude Watson Award for excellence in education from the North York school board.

Meandering path

Ledger has followed a meandering path to mastering math, from a life insurance businessman to a missionary in Uganda to an Anglican minister who conducts services for veterans.

Ledger says this pot pourri of experience has added up to make him a more efficient teacher of mathematics.

Plastered across the front of his classroom, massive graphs zigzag up the board like profits in a hugely successful corporation. They're graphic illustrations of his 154 students' improvement, plotted out faithfully from September through April.

Every day the class takes an impressive 10-minute drill. Ledger snaps out numbers and just as quickly the students tally up the answers. The drills are marked in class, then the class average is plotted onto the graph.

Ledger says this not only develops the students' mastery of math, but the graph bolsters their self-confidence by showing them how much they've improved.

At the beginning of the year the average faltered below the 50 per cent mark, but now it's sky-rocketing above 87 per cent.

Creates excitement

"It gives them something to aim at, and creates quite a bit of excitement in the classroom," says Ledger.

During the year, the students study great mathematicians such as Einstein, Descartes and Archimedes.

Like those greats before him, Ledger often digresses from the conventional, forsaking the textbook order of operations in problem-solving — which is usually done from left to right, beginning with those operations in the brackets — to allow students to develop their own organization.

"Many people view mathematics as iron-clad rules that must be followed," Ledger says. "It's better to get the students to see that there can be different approaches. They seem to like it a lot better . . . they seem to lose their fear of doing things the right way . . . and we can immediately move on to more difficult questions."

That's probably another reason his students do well. Ledger is not content to let his students slide. If they've grasped a concept, they move on to something more difficult.

More than one student has lightly called him a "slave driver" — in fact, on the last day of school last week, Ledger gave his students a test.

"Things go so fast in his class that you don't have time to talk or fool around," says 13-year-old Jennifer Barclay.

"In other classes the teachers tell you what to do and that's it," adds Brad Crafton, 14. "Ledger doesn't just teach how you do something, but why."